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ADDRESS.

CHAIRMAN'S ADDRESS.

Delivered in the Section on Diseases of Children at the Forty-eighth Annual Meeting of the American Medical Association, at Philadelphia, Pa., June 1-4, 1897.

BY JOHN A. LARRABEE, M.D.

LOUISVILLE, KY.

In consideration of the event of the semi-centennial meeting of the AMERICAN MEDICAL ASSOCIATION, I have deemed it proper to depart from the customary style of the annual address in order to give, as far as possible, a correct history of the Section over which I have the honor to preside. To accomplish this I have placed myself in communication with some of the older members of the ASSOCIATION and with Dr. William B. Atkinson, the Permanent Secretary. The following letters, from Dr. A. Jacobi of New York, and Dr. T. M. Rotch of Boston, will throw some light on the origin of our Section:

NEW YORK, Feb. 5, 1897.

JOHN A. LARRABEE, M.D.

Dear Doctor:—There is no history. We just did it. As I felt in some doubt I wrote to Dr. Rotch and as the enclosed letter shows, he knows just as little. It is a clear case of spontaneous generation, the Section was in the air, and we were present when it condensed. That is all.

Very sincerely yours, A. JACOBI.

197 Commonwealth Ave., Feb 2, 1897.

Dear Dr. JACOBI:—I only know that you were asked by a number of men to found the Section and be its first President at the meeting in Richmond. You asked me to be your Secretary and I accepted with pleasure and listened to your words of wisdom. Sincerely yours, T. M. ROTCH.

It was not until the year 1880 that the Section on Diseases of Children became independent. Previous to this time the work of this Section was done in the Section on Obstetrics and Diseases of Women. At this meeting of the ASSOCIATION, which was held in New York City, an address on the Claims of Pediatric Medicine was delivered by Dr. Jacobi. Dr. S. C. Busey offered a resolution creating this the sixth Section of the ASSOCIATION, and Dr. A. Jacobi was made Chairman and Dr. W. H. Bradford of Massachusetts, Secretary. Thus it will appear that our Section is the sixth legitimate offspring of the AMERICAN MEDICAL ASSOCIATION. Dr. Busey of Washington, D. C., was the accoucheur on this occasion and Dr. Jacobi stood godfather for the tender infant. Many distinguished worshipers were also present and brought precious spices and rare incense to lay at the feet of the newborn babe. Papers were read by Busey on Chronic Bright's disease in children, caused by malaria; by James S. Green of New York, on a Case of congenital occlusion and dilatation of the lymph channels; by Jacobi, on Atrophy of a fetal liver, and Case of supra-pubic lithotomy.

At Richmond, in 1881, Dr. Jacobi presided as Chairman and Dr. T. M. Rotch was made Secretary. The following papers were read: By Jacobi, Address on progress in the knowledge of the acute contagious diseases and infections; Relations between growth and disease, by H. P. Bowditch of Massachusetts; Middle ear disease in children in the acute exanthemata, by C. J. Blake of Massachusetts, and Thumb sucking, by D. H. Goodwillie of New York.

At St. Paul, 1882, William Lee of Maryland was chosen President in the absence of Dr. Busey, the Chairman, and E. C. Miller of Iowa, Secretary. N. S. Davis read a paper on the Efficient causes of serous diarrhea and cholera morbus in infancy and early childhood, and the best means of lessening the mortality therefrom; William Lee, on Treatment of rickets.

In 1883 the JOURNAL appeared. The same year, owing to the absence of both chairman and secretary, C. W. Earle of Chicago was made Chairman and E. L. Bothby of Wisconsin, Secretary. Dr. Blount, the Chairman, assumed duty the second day. Papers were read on Unity of membranous croup and diphtheria, by Harris of Virginia; on Epidemic jaundice among children, by A. Y. P. Garnett of Washington, D. C.; on Surgical treatment of purulent pleuritic effusions in children, by W. H. Meyers of Indiana; A plea for pleasant medication and a more thorough study of infantile therapeutics, by C. W. Earle; on Dentition, by Good of Indiana; on Pediatric medication, by Casebeer of Indiana; on Infantile paralysis, by N. Teale of Indiana; on Diphtheria, its varieties and variations, by E. L. Boothby of Wisconsin. (Full names are not given because not published, the minutes of some Sections not being reported there was difficulty in finding these.)

In 1884 papers were read by S. S. Adams, on Incontinence of urine in children; Treatment of diphtheria, by J. W. Brown of New York; Septic jaundice of childhood, by M. P. Hatfield of Illinois; Feeding of school children, by L. W. Atlee of Philadelphia.

1885.—Repeated doses of castor oil in skin diseases of children, by L. D. Bulkley, New York.

1886.—Address by W. D. Haggard of Tennessee; Treatment of diphtheria, by D. L. Miller of Chicago; Why diseases of children should be made a special study, by Mary H. Thompson of Chicago.

1887.—Diarrhea infantum and allied diseases, by C. W. Jones of Chicago; Causes and treatment of entero-colitis in infants, by S. B. Sperry of Wisconsin; Infant feeding, by L. D. Bulkley of New York; Treatment of malarial fever in the infant and young child, by W. B. Lawrence of Arkansas; Congenital phimosis, by W. S. Stewart, of Philadelphia; Diphtheria, by H. L. Getz of Iowa; Eczema, by J. V. Shoemaker of Philadelphia.

1888.—The infant food problem, by W. B. Atkinson of Philadelphia; Intubation, by F. E. Waxham, of Denver; Infant feeding, by C. W. Earle of Chicago; Chorea, by G. W. Jones of Danville, Ill.; Is

membraneous croup and diphtheria identical, by I. N. Love of St. Louis; Hepatic incompetence in children, by M. P. Hatfield of Chicago; Management of fevers in children, by J. A. Larrabee, of Louisville, Ky.

1889.—Scarlet fever, by C. R. Early of Pennsylvania; A penal rule of our common schools and some of its effects, by D. S. Booth of Sparta, Ill.; One year of acetanilid in pediatric practice, by I. N. Love of St. Louis; Physical education in children, by A. H. B. Leuf of Philadelphia.

1890.—A plea for operative interference in peritonitis with reference to its obscure origin in children, G. F. Lydston of Chicago; Antipyrin in children, by S. H. Desson of New York; Significance of high temperature in children, by W. A. Stowall of New York; Croup and diphtheria, by W. P. Watson of New Jersey, chosen Chairman, and W. R. Hare of Pennsylvania; Croup, by C. R. Earley of Ridgway, Pa.; Commercial milk sugar in infant feeding, by E. F. Brush of Mt. Vernon, N. Y.; Acute rheumatism in children, by S. F. Parsons of Boston; Value of atropin in enuresis, by R. B. James of New York; Further observations on foot and mouth disease in its relation to scarlatina as a prophylactic, by J. W. Stickler of Orange, N. J.; Alcoholic heredity in diseases of children, by T. D. Crothers of Connecticut; Feeding the young, by O. H. Phelps of Blocksbury. Cal.

1891.—Four hundred cases of intubation, by F. E. Waxham of Chicago; Acute bronchitis in children, by C. L. Dodge of Kingston, N. Y.; Relation of food to scorbutus in children, by E. F. Brush of Mt. Vernon, N. Y.; Acute meningitis and treatment, by G. H. Higly of Pennsylvania; Ought infants to be washed directly after birth, by F. S. Parsons of Northampton, Mass.; Eczema infantile, by D. M. Ricketts of Cincinnati; Herpetic eruptions of the mouth and pharynx in children, by S. H. Dessau of New York.

1892.—Morbid proclivities and retrogressive tendencies in the offspring of mullatoes, by W. A. Dixon of Ripley. Ohio; Contagion of scarlet fever, by E. F. Brush of Mt. Vernon, N. Y.

1893.—Diphtheria, by F. E. Waxham of Denver, Colo.; Prevention of diphtheria, by J. Lewis Smith of New York; Recent advances in pediatrics, by C. G. Jennings of Detroit, Mich.; Isolated cases of diphtheria, by W. A. Dixon of Ripley, Ohio; treating cases of diphtheria, by G. B. Dunmire of Philadelphia; Discussion. Pathogenesis of bronchitis in infants and children, by W. S. Christopher of Chicago; Pathology and symptomatology of acute bronchitis and broncho-pneumonia, by C. L. Dodge, Kingston, N. Y.; Some phases of broncho-pneumonia in children, by J. M. G. Carter of Waukegan, Ill.; Pneumonia pathology and symptomatology, by F. S. Churchill of Chicago; Therapeutics of bronchitis, by I. N. Love of St. Louis; Treatment of broncho-pneumonia in children, by F. S. Parsons, Northampton, Mass.; Therapeutics of croupous pneumonia, by J. A. Larrabee of Louisville, Ky.; Discussion on these. Hernia in children, by W. E. Wirt of Cleveland, Ohio; Phimosis—a plea for its early relief, by J. A. Hofheimer of New York; Importance of early effective elimination in the zymotic diseases of children, by J. A. Work of Elkhart, Ind.; Meningocele with case, by M. G. Sloan of Dexter, Iowa; Infantile hernia, by T. H. Manley of New York; Treatment of chorea by large doses of quinin, by W. A. N. Dorland and C. S. Potts; Statistics of intubation, etc., by F. E. Waxham; Primary syphilis and gonorrhea in children, by B. M. Ricketts of Cincinnati; Cholera infantum in malarial localities, by J. Schenck of Mt. Carmel, Ill.; Dentition and its diseases, by M. Thrasher of San Francisco, Cal.; Acute endocarditis in children, by G. N. Highly of Conshohocken, Pa.

1894.—Pediatrics as a specialty, by W. S. Christopher of Chicago; Pneumonia in children, by E. H. Small of Pittsburg, Pa.; Exophthalmos in infant of three months, by H. E. Garrison of Dixon, Ill.; Derangement of kidneys in lithemia of children, by J. M. G. Carter of Illinois; Eczema of children, by W. M. Bolton of New Harmony, Ind.; Causes of therapeutic uncertainty in children, by A. C. Cotton of Chicago.

1895.—Enteric fever in infancy, by W. B. Noyes of New York; Typhoid fever in children, by J. E. Woodbridge of Youngstown, Ohio; Discussion on same. Guaiacol in typhoid in children, by A. Koenig of Pittsburg, Pa.; Acute lacunar diphtheria, by H. Koplik of New York; Antitoxin in diphtheria, by L. Fischer of New York; Diphtheria and antitoxin, by A. C. White of New York; Diagnosis and treatment of false croup, by S. Loving of Columbus, Ohio; Discussion on these. Antiphthisin in tubercle of children, by E. Klebs of Asheville, N. C.; Discussion. Scorbutus in infancy, by I. N. Love; Infantile diarrhea, by Rosa Engelman of Chicago; Colitis in infancy and childhood, by E. Anderson of Rockville, Md.; Pseudo-membranous enteritis with lumbricoides, by I. M. Snow; Sulphate of magnesium in summer diarrhea of children, by S. Patterson of Pittsburg, Pa.; Discussion of these. Has tuberculous cow's milk causative influence in infancy, by F. S. Parsons; Causes of great mortality in infancy, by J. A. Work of Elkhart, Ind.; Heredity and its environments, by J. E. Rigg of Wilkinsburg, Pa.; Bromoform in pertussis, by P. J. Eaton of Pittsburg, Pa.; Double club feet and hands, by B. M. Ricketts of Cincinnati.

1896.—Chairman, A. C. Cotton of Chicago; Secretary, A. J. Work of Elkhart, Ind. Diagnosis of diseases of infants and children, by C. G. Slagle of Minneapolis, Minn.; Sepsis of the new born, by H. E. Tuley of Louisville, Ky.; Chorea, by H. Hatch of Quincy, Ill.; Functional dyspepsia of children, by J. M. G. Carter; Spinal injuries in infants, by J. P. Fiske of New York; Treatment of fractured shafts of bones in children, by T. H. Manley of New York; Epilepsy following injuries in children, by W. A. Dixon of Ohio; Petit mal in children, by L. F. Bishop of New York; Discussion. Use of the stomach and rectal tube in children, by W. J. Bell of Atlanta, Ga.; Infantile scorbutus, by A. H. Burr, of Chicago; discussion. Evolution of girls, by H. E. Harrison of Dixon, Ill.; High pressure in teaching public schools, by W. H. Short of LaGrange, Ind.; Rachitic chest deformities in twins, by W. J. Bell of Atlanta, Ga.; Circumcision not necessary in young children, by W. B. Parks, Atlanta, Ga.

OFFICERS FOR THE SECTION.

1883. Chairman, W. Lee, Baltimore, Md.; secretary, W. R. Tipton, Las Vegas, New Mexico.

1884. Chairman, J. H. Pope, Texas; secretary, S. S. Adams, District of Columbia.

1885. Chairman, W. D. Haggard, Nashville, Tenn. secretary, W. B. Lawrence, Batesville.

1886. Chairman, DeLaskie Miller, Chicago; secretary, W. B. Lawrence.

1887. Chairman, F. E. Waxham, Illinois; secretary, W. B. Lawrence.

1888. Chairman, J. A. Larrabee, Louisville, Ky.; secretary, C. G. Jennings, Detroit.

1889. Chairman, I. N. Love, St. Louis; secretary, E. F. Brush, Mt. Vernon, N. Y.

1890. Chairman, W. P. Watson, Jersey City; secretary, W. R. Hare, Pennsylvania.

1891. Chairman, E. F. Brush; secretary, B. A. Waddington, Salem, N. J.

1892. Chairman, C. J. Jennings, Detroit; secretary, F. S. Parsons.

1893. Chairman, W. S. Christopher, Chicago; secretary, F. A. Churchill, Chicago.

1894. Chairman, E. H. Small, Pittsburg; secretary, G. N. Michel.

1895. Chairman. As above.

1896. Chairman, J. A. Larrabee, Louisville; secretary, H. E. Tuley, Louisville.

The wisdom of the establishment of the Section of Pediatrics in the AMERICAN MEDICAL ASSOCIATION needs no better demonstration than is furnished by this history. Many of the early contributors are now enumerated among the authorities upon diseases of children. The claim of pediatrics as an established specialty in medicine is based upon the essential difference in diseases having the same nomenclature in adult life. The growing organism presents anatomic and physiologic peculiarities, which not only increase susceptibility to the acknowledged etiologic factors of disease, but also influence the rapidity of pathologic changes. There has been no advance made in medicine within the last quarter of a century which has resulted in greater benefit to the human race than that made in pediatrics. A closer and more careful observation by men who have devoted their entire attention to this field has been extremely fruitful in bringing to light new diseases. Diseases which formerly were considered rare in infancy and childhood by a closer observation have been found to be of frequent occurrence. The time when a few lectures tacked on to the chair of obstetrics sufficed to fill the curriculum of requirements of medical colleges has passed away never to return. Pediatrics as a special branch with ample clinical instruction, is today obligatory in all reputable medical colleges. Certainly there is no specialty in medicine which requires more thought, keener observation and more patient study than pediatrics. The embarrassment of a traveler in not being conversant with the language of the country which he visits, is not more than that of the practitioner who invades the domain of the nursery without having mastered the unwritten language of its diseases. Here particularly do I desire to emphasize the importance of a closer study of the physiognomy of disease as written in unerring characters upon the face of infancy and childhood. A language when once learned and understood is far less misleading than the spoken language of adult life.

Slumbering embers of disease are suddenly fanned into a fierceness which threatens destruction, while on the other hand we are astonished by sudden and unexpected recoveries in apparently hopeless cases. Disorders of the digestive system are of frequent occurrence and are fraught with consequences to the growing organism far beyond their significance in adult life. For this reason severe and protracted illnesses in early childhood arrest development and affect the mental and physical welfare of manhood and womanhood. Strikes among workmen may be noted by observation of the structures upon which they were engaged. Faults in the Commissary Department of our Army in times of peace would be far less disastrous than to an army actively engaged in the field. Malnutrition, malassimilation, improper food and faulty hygiene may thus cripple the corpuscular elements engaged in phagocytic war and place the child beyond possibility of repair. It is, therefore, of the greatest importance that the diseases of early life should receive prompt attention. If such conditions are overlooked or not properly understood they will culminate in serious conditions in adult life. Nothing which concerns the child should be considered as trivial.

When the AMERICAN MEDICAL ASSOCIATION, whose semi-centennial anniversary we today commemorate, was organized, there was a scarcity of pediatric literature. Choice and reliable works were in demand. Such works are always in demand, but the paucity of medical literature can no longer be regretted. The multiplicity of irresponsible medical publications is to be deplored. We are beginning to realize the force of Solomon's words, "of making many books there is no end." We can also appreciate the saying of Josh Billings, "that it is perhaps better not to know so much as to know so much that ain't so." It would be well if a healthy censorship could be exercised over our periodical publications. It is oftentimes exceedingly refreshing as well as profitable, to lay down the "up to date journals" and pick up a volume of Bennett, Flint, Wood or musty old Watson, and recognize in these great thinkers of a past generation the foundation-stone of the edifice of which we are the topmost structure.

The conclusions which we would draw from such retrospection would be that "every new thing is not true and every true thing is not new." The ambition to write a book is only equaled by the young man in Dickens' "Bleak House." The attempt to master the periodic medical literature of today will as certainly result in a mental dyspepsia as would an attempt to digest the entire *menu* at the Hotel Walton.

During the past year some of the doubtful, or at least debatable questions in therapeutics have become established. Particularly is this true of blood serum therapy and diphtheria antitoxin. It will be remembered that this Section, at Atlanta, presented especial attraction by reason of the talent arrayed on either side of this question. It must be considered for the benefit of future medicine, that all innovation upon established practice and all new or theoretic therapeutics should meet with severe criticism and even violent opposition. Antitoxin has certainly been accorded a liberal share of patronage in this direction. There is probably no better established principle in therapeutics than that quinin cures malaria, nor in inoculation, that vaccination exterminates smallpox, but physicians of London and Paris would have thrown old John Talbot and his bitter tea into the Thames or Seine before he cured Louis XIV. of France, and Jenner would at one time have shared the same fate from the populace whom he saved. The credit of discoveries in medicine and surgery should not redound to those who have simply conceived the idea, but to those who by persistent trial have demonstrated the utility. Your Chairman has no hesitancy in ex-

pressing the opinion that the past year's experience has materially lessened the ranks of doubters, and while the extravagant and unreasonable expectations of the over-sanguine have not been wholly realized, antitoxin must now be placed in the required armamentum of the successful practitioner.

The study of bacteriology aided by the wonderful revelations of the microscope has established a new era in the practice of medicine. Etiology and pathology, the formerly intricate mazes, have become plainer pathways and lead us more directly to the effulgent light of truth. This comparatively new field of medical observation presents so many attractions and is in itself so fascinating a study to the student, that there is danger of neglect of semiology. The devotee of the laboratory finds that he is poorly fitted for bedside diagnosis. For this reason clinical medicine must go hand in hand with laboratory work. Special work in medicine and surgery has been an essential factor in the advancement of a conjectural art to an established science, but the practice of specialties should be the outgrowth of natural predilection based upon years of experience in general practice, and the assumption of specialties by inexperienced college graduates is much to be deprecated. Hippocrates' injunction to his students to view the body outstretched, by which was meant a trained observation, is still good teaching. Germicidal therapeutics is all well enough and oftentimes commendable, but there are other indications in the treatment of disease than the possible destruction of pathogenic microbes. Someone has very aptly put this question by saying that in swinging a club to kill microbes we may hit the patient also. The older we grow in the practice of medicine, the more we are impressed by the thought that most of the diseases, as well as the troubles and trials of life, are preventable. It is as natural for an honest doctor to become a philanthropist as it is for a minister of the gospel to become a Christian. Preventive medicine and private and public hygiene mark the progress of the age in which we live. Prophylaxis is better than cure. We are all prompted by a common interest, which is not always appreciated by our patrons, to sacrifice the comforts of life and if needs be life itself gratuitously for the extermination of disease, an object which, if attained, would effectually ruin our vocation. I shall never forget the address of the senior Gross when he was President of this ASSOCIATION. Never did that grand old man appear to me so lovely as, when crowned with all the honors of earth, the surgeon laureate of the civilized world, standing in the twilight of a well-spent life when only the "sorrows of others cast their shadows over him," he pleaded long and earnestly for a purer, better manhood and for the eradication of that vile blot upon humanity, which has entailed upon man and innocent childhood two-thirds of all their sufferings. As pediatricians, we have a better opportunity of knowing the hereditary constitutional diseases and also of judging the so-called cures of diseases acquired by parents. The thought is indeed a sad one, that among the thousands of infants now resting in their cradles such a number will suffer from inherited syphilis, so many will end their lives in misery, so many will help to swell the number of helpless cripples in our asylums, so many will fill our jails and workhouses, while not a small proportion are doomed to fill a drunkard's grave. It is a sadder thought to think, as we are forced to do from statistics gathered in our large and populous cities, that succeeding generations shall reveal a still larger number equally doomed. The hope is father to the thought, that from this Section with its wisdom, in future years there may be evolved laws regulating matrimony which shall forever preclude the possibility of placing upon the charities of the world a helpless deformity. The older nations of Europe, depleted by vice, and among the nobility by consanguinity, are framing such laws. Notably in France, and I am informed that in our own country the legislature of Texas has this matter under advisement. It has been proposed to make syphilis, cancer, epilepsy, inebriacy and tuberculosis tenable grounds for restricting matrimony and obtaining divorce.

There is no age of either ancient or modern civilization that can boast of such magnificent and munificent charities as the age in which we live. Asylums for the afflicted and unfortunate abound in every part of our country, while hospitals, reformatories and sanitariums appear on every hand. The demand for such institutions is still increasing and is met by a liberal response. Now while these eleemosynary institutions will remain as enduring monuments to Christian civilization, it can not be doubted that they tend to promote the degeneracy of the race by making the survival of the unfittest a possibility, thus reversing the Darwinian law. Nevertheless, we have not the authority of the Areopagi of Greece, nor the regulations of Sparta, to destroy diseased and perverse offsprings.

While I believe that some law regulating matrimony would be followed by a race improvement which would show in a single century, such legislation as proposed in France and Texas would be followed by an increase in certain classes of criminals, while illegitimate offsprings would present no better physical status. I believe that there is only one way in which this momentous question can be met and that is by a higher moral education based upon the study of medicine. It is therefore incumbent upon this Section to be an educator of the public, and teach people the importance of having a care for the progeny of man. If ministers of the gospel were educated in medicine we would have less sermons upon the sins of the Israelites and more upon our own society vices. It seems strange and unaccountable that man should be the only animal in regard to whose progeny no care is exercised while cattle and hogs are considered fit subjects for State legislation. The study of physiology and hygiene should be made compulsory in all schools and in all grades of the schools. Let it be understood that "the greatest study of man is man."

ORIGINAL ARTICLES.

RENAL SUPPURATION, CATARRHAL, SPECIFIC AND TRAUMATIC, AND THE VALUE OF MICRO-URANALYSIS OF THE URINARY SEDIMENT AS AN AID TO DEFINITE DIAGNOSIS OF IT.

Presented to the Section on Obstetrics and Diseases of Women, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

BY THOMAS H. MANLEY, M.D.

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A peculiar clinical experience during the past year, has led me to the investigation of a class of lesions

commonly enough encountered by most practitioners with fair opportunities for observation; but certainly in a considerable proportion of cases they are not understood, nor their clinical manifestations correctly interpreted. I refer to kidney abscess or pyonephrosis; of late, also designated "surgical kidney," for the reason that it is supposed that the lesion admits of relief or cure only by surgical measures, which is only correct, however, in exceptional cases.

Much diversity of opinion has arisen, in consequence of the confusion of terms employed by different authors, in describing the various types of renal suppuration; and, on the other hand, by an attempt at an over-refinement and irrational differentiation of pathologic conditions.

Thus we will note, that one speaks of renal suppuration as pyonephritis, another as pyonephrosis, another as pyelitis, and another as pyelonephrosis.

With our present knowledge of the most common mode of advance of suppurative lesions, it would be well, at least for purposes of diagnosis, if they were reduced simply to three varieties in non-complicated cases: 1. Primary catarrhal pyelitis. 2. Interstitial renal suppurative abscess. 3. Perinephric suppuration—extrinsic.

Catarrh—nephritis, suppuration—This is the usual type of renal suppuration when infection or spread of diseased processes is from below—*ascending*.

In this class it becomes a simple matter to trace the origin of pathologic processes from their source; but in a considerable proportion of cases, the clinical manifestations point to the renal parenchyma itself as being the seat of primary changes.

Interstitial suppuration—parenchymatous.—This may undoubtedly result from a back-flow of the urine, renal calculi, or tubercular infection. In this form, we may have either *open* or *closed* suppuration. In the former the pus *foyers* drain directly into the urinary stream; while in the latter, it is pent up and infiltrates.

Perinephric abscess.—By this term is to be understood a purulent formation of renal origin, burrowing through the inner capsule and discharging into the loose fatty investment or the retroperitoneal tissues. Pus may appear in the urine in very small quantities here, or be entirely absent, as in certain instances of encapsulation or obstructive pyelonephrosis.

Local causes of renal suppuration.—1. Lithiasis, calculus impaction. 2. Trauma, contusion or laceration of renal substance.

Toward the middle of the present century, Laennec, by the simple application of the laws of acoustics in the studies of pulmonary maladies, irradiated the whole science of physical diagnosis as it is applied to the detection of intrathoracic diseases. To one who has made anything like a methodic study of modern renal diagnosis of suppurative lesions of the kidney, it seems remarkable after Laennec's discovery, how we should have groped in the dark for so long a period without utilizing the means within our reach for more precise elucidation in the diagnosis of renal suppuration.

It will be my purpose on the present occasion, while considering a few features of renal suppuration, to point out how we may determine its presence, its character and extent with more certainty than we can a similar pathologic state in any other internal organ of the body.

Verhaagen has made a clear and rational distinction between the diverse varieties of renal lesions, which are *medical* or *constitutional* and those which are chiefly *local* or *surgical;* the former depending on blood changes or toxic states and the latter mainly on local influences. This latter only, can be briefly considered here, from the standpoint, chiefly, of diagnosis.

It is now quite generally conceded that renal suppuration or pyonephrosis very often depend ultimately on an alkalin fermentation of the urine. This has been quite conclusively demonstrated by several distinguished investigators; notably by Van Gieghem, Fels and Ritter, Klebs, Lister, Lancereaux, Lepine, Roux, Krozius, Roosing, Escherisch, Moselle, Schmidt and Aschoff.

Delafield believes that pyelonephrosis most commonly affects both kidneys, that "far as he knows, all these patients die; that when it is once established there is no control of the disease." Weir is not disposed to accept this view, and cites Goodhart's Guy's Hospital reports. This author collected 270 cases of death from urinary disorders, of which 130 were surgical kidney. In 100 of these, there were strictures. There were forty-one cases of suppurating kidney. There were but three in which the disease was limited to one side. In twenty-seven there was prostatic hypertrophy; in fourteen cancer of the bladder. There were forty-four cases of stone; twenty-nine cases of cancer of the uterus. There were fifty-six paraplegic; in twenty-six of these suppuration was limited to one side. On an average there were 14.5 per cent. limited to infection on one side. Dickinson, in sixty-nine cases of death from suppuration of the kidney recorded in St. George's Hospital, found in nineteen, pre-existing stricture of the urethra; disease of the prostate in twelve; in the remainder, there was loss of the vesical power, calculus and cystitis. In his opinion, the liberation of free ammonia in urinary decomposition is the chief factor in the etiology of pyonephrosis.

According to Bazy's statistics, in about 20 per cent. of cases of suppurative kidney, the lesion is unilateral. In Hamil's experience tubercular kidney is commonly unilateral; but if bilateral it is always much more severe on one side than the other.

I have been unable to gather from the literature on "surgical kidney" during the past fifteen years, whether suppurative formations are more common in one sex than the other, or on the left side of the body than the right. Since my studies on this class of lesions commenced, I am, however, convinced that renal suppuration is an infirmity very much more common than is generally supposed.

It is highly probable that in quite a considerable number of cases of presumed unilateral lumbago or nephralgia, the underlying lesion consists of calculous or purulent impaction of the renal pelvis, or the ureter.

In the past, we have been led to overlook the exact pathology of many extensive local renal lesions, because of the absence of grave constitutional symptoms from urinary disturbances, unmindful of the fact that the sound or unaffected organ on one side undergoes compensatory enlargement and thus relieves the one involved by disease. Da Costa maintains, and no doubt with truth, that abscess almost never effects primarily but one kidney at the same time.

Extrinsic and intrinsic injury of the kidney as an element in the causation of renal abscess or ulceration.—Exclusive of pyemic infarcts or the plugging of

the arterial branches by substances carried in the blood the most prolific cause of abscess or ulcer of the kidney is trauma, mechanical obstacles to the flow of urine, the presence of autogenous bodies in the cortical substance, or the effects of violence applied from without. Dr. Henry Morris, in speaking on this aspect of the question, says: "Abscess of the kidney is one of the varieties of suppurative disease of this organ Its consideration might appropriately find a place in connection with injuries of the kidney, as they are the most ordinary causes of renal abscess." Mayer, in *Virchow's Archives*, describes a case of abscess, following the thrombosis of the renal artery, after an injury. In these cases, he believes, the primary changes commence with a calculus plugging of the tubules, purulent formation consecutively setting in.

The advances of pathologic processes in the kidney after the external injury are precisely the reverse of what occurs when they proceed from diseased conditions lower down.

In the former, we first observe perinephritic hemorrhage and inflammation propagated through the capsules to the cortex, then pyonephrosis, later pyelitis, ureteritis and cystitis. Physical influences are here the dominant factor; in the latter, chemical changes and the extension of infective, putrid processes.

The significance and source of pus corpuscles in the male and female urine and their relation to suppurative kidney.—A morphologic and bacteriologic examination of the urine, constitutes one of the most valuable aids known to medical science, in the diagnosis of lesions along the urinary tract.

In the present state of our knowledge of the subject, it might be, perhaps, not strictly within the limits of exact truth, to allege, that by a microscopic examination of purulent urine we are always enabled to determine with definite and absolute certainty the exact or precise seat of the morbid process; nevertheless the fact is, that by its revelations alone, we may more completely elucidate diagnosis than by all our other resources combined.

In this connection it is well to remember, that a preliminary, systematic, subjective, general and local examination of the patient constitutes an adjunct of the highest importance, which, taken together with the morphologic analysis, should in every instance decide with precision the pathologic process. On this point, however singular it may seem, there is at present some divergence of opinion, for while the general consensus of views supports this position, there are some few highly respected authorities not in full accord with it, who deny, in fact, that we are able to decide on the source of urinary pus by any special characters it presents.

But let us see on what grounds their premises are based and hear from the other side. Da Costa says: "As to the exact seat of the formation of pus, its existence in the urine affords us no clue," and yet with singular inconsistency he adds, "to some extent, however, we can judge of this by the microscopic appearance of the corpuscles. . . . The sudden appearance of pus in the urine in large quantities points to the bursting of an abscess. An abundant deposit of pus in acid urine is chiefly found in pyelitis."

Thudicum goes little further than to call attention to the special qualities of pus corpuscles in the urine, as indicating whether they are from a tubercular abscess or ulcer.

Johnson has described peculiar pus-casts and epithelia thrown off in the urine by those who later, on autopsy, were found to have renal abscess. Purdy says that "pus in the urine may be derived either from the free mucous surface of the urinary tract, an ulcer, or from the tissue substances; and in such cases it is liable to be mixed with elements of its place or origin, which become of great diagnostic value."

Le Dentu regards the diagnosis of pyuria as often very difficult. Brodeur calls attention to the great help of urinary microscopy in these cases.

"Casts composed of pus corpuscles," says Hare, "are rarely seen, but if constantly present, may indicate multiple abscess of the kidney; and when masses of micrococci become grouped together in the tubules and are expelled in casts the significance of their discovery is, that septic infection of the kidney is present. They are seen in suppuration, renal inflammation and in pyelonephritis, in which the true renal tissues are involved by an extension of the disease."

Simon, one of our latest and most advanced authors on this subject, declares that "a marked increase of leucocytes in the urine must always be regarded as indicating the existence of disease somewhere in the course of the urinary tract, except in females, when their presence may be owing to an admixture of leucorrheal discharges; in the latter the pus will be mixed with the pavement vaginal epithelia." This author declares that, "from a clinical standpoint it is of the greatest importance to establish the source of pus in every case of pyuria," and he adds, "a careful examination of the epithelial elements in the urine will be of great value and should never be neglected."

Bizzozero lays it down as a law, that in nephritis the number of pus corpuscles present stand in a direct relation to the intensity and acute character of the morbid process.

Roberts admits that, "in the first stage of pyuria the presence of characteristic epithelia generally sufficiently indicates the nature of the disease, but in advanced cases this valuable sign is not available." Newman is in accord with this view and claims that as new epithelia in the renal tubules, when shed, are small, imperfectly developed they can not be distinguished from pus corpuscles.

Musser says: "Urine containing much pus is slightly albuminous, but pus cells are found frequently in the urine which gives no albuminous reaction." This author makes the rather ambiguous statement in this connection, that it can not be decided from "a microscopic examination whether a cell is a pus corpuscle, a mucous corpuscle, a white blood cell or an inflammatory leucocyte."

Tyson practically discards uranalysis as an aid to localizing pyuria. Guyon is of the opinion that the presence of hyaline cylinders and various epithelia may, with pus, serve to decide its origin, but their absence by no means is negative of renal suppuration. Ralfe concedes that in the early stages of pyuria it is possible by a microscopic examination to determine its source.

From the foregoing we may gather: 1. That all investigators agree that the presence of pus in the urine, in considerable quantities, is always an index of serious or severe inflammatory action along some part of the uropoietic tract, when we eliminate gen-

ital admixture in the female. 2. There is a quite general accord of opinion on our ability to distinguish urethral from vesical suppuration, and recognize renal implication in the purulent deposits of early acute renal suppuration. 3. Many, especially medical authorities, are not yet prepared to admit that epithelial admixture in purulent deposits of the urine enables us to determine with certainty the precise source of leucocytosis in all cases. 4. A large and ever-growing number of observers, thoroughly trained in morphologic uranalysis, are emphatic and positive that the epithelial casts and parenchymatous elements thrown off in pyuria, taken in connection with other diagnostic aids, will invariably and with absolute certainty establish the source of pus production.

In America, my late master, the lamented eminent anatomist and pathologist of New York, Dr. Carl Heitzman, taught in his laboratory that the trained microscopist could not be deceived as to the exact seat of pyuria by a morphologic examination. This, he taught for more than fifteen years before his death. But, he was one of those whose modesty was only equaled by his profound erudition and great breadth of scientific achievement. In the current medical press he wrote little or nothing; but now that he has passed from among us, his great work on urinary morphology is making its impress felt wherever medicine is cultivated as a science.

It is my own conviction now, after some years of study on the subject, that the main reason why we are skeptic of the findings of urinary morphology, is because many who have had some general knowledge of the employment of the microscope in normal and pathologic histology believe themselves amply equipped to examine urine. The result, of course, is a lamentable failure, as, through want of a long technical training and opportunities under a skilled and experienced master, they are utterly incompetent to interpret the multiplicity of phenomena revealed by diseased urine.

In the present instance it will be my purpose to very briefly and incompletely call attention to the infinite value of the study of the morphologic elements of the urine in *renal* pyuria alone, as space will not permit a consideration *in extenso* of vesical or urethral, in connection with other diagnostic auxiliaries. Many writers and pathologists, it appears, in their efforts to divide the various types of kidney suppuration on an anatomic basis, instead of elucidating the subject, have greatly confused it. For example, an effort has been made to demonstrate such a lesion *per se* as pyelitis, renal abscess and pyonephrosis. But, let us take for example an impacted calculus in a renal tubule, and what do we have? 1. A distension of the tubules with epithelial erosion and leucocytosis—an *abscess formation*. 2. This impacted infarct is pressed into the mucous membrane of the renal pelvis, when we have *pyelitis*. 3. The inspissated pus, *detritus* or calculus, block up the ureter and widely distend the pelvis of the kidney, when we have *pyonephrosis*.

We might follow the course of this suppurative lesion further, and find, quite invariably, a ureteritis and cystitis.

The pathologic mutations are quite identical in infective lesions, though somewhat reversed or modified. My experience and training have taught me that with facilities now at our command we are enabled to determine with certainty the presence or absence of renal suppuration, or ulceration of the kidney as applied in its broad sense; but to differentiate an interstitial abscess from a pyelitis or a pyonephrosis, is as yet an impossibility. It will be noted that my observations here are restricted to the diagnosis only of the lesions which are entirely of a local character.

Before pursuing further, at present, the discussion of the morphologic elements of the urine, in surgical kidney, it may be well to turn aside briefly to consider some of the more pronounced subjective and rational signs attending renal suppuration.

Pyonephrosis without pyuria.—Four years ago, in a postmortem examination on a man who succumbed after an operation for gangrenous hernia, I came upon a greatly enlarged kidney on the right side. Its capsule was densely adherent to the adjacent parts and was unavoidably ruptured in its detachment, when an enormous quantity of pus with urine escaped into the abdomen. Nothing but a thin shell of cortical substance remained. Yet, in this instance, before operation this patient was closely questioned by me as to previous disease or infirmity of any description, when he denied ever having any other trouble than his hernia. I might add that the urine passed and examined after his admission to the hospital showed negative evidence of either sugar or albumin. No microscopic examination of it was made.

General symptoms and course.—The statements of many authors are certainly most misleading and erroneous with respect to the duration and symptomatology of suppuration within the kidney; some declaring with Delafield that it is progressively destructive, and others that its evolution is always attended with the most pronounced constitutional disturbances; while the fact is, that there is no more reason why we should not, and do not, as often secure a cure of a renal abscess, when it is uncomplicated, than we should of one of the lungs; and while, in some few individuals, surgery alone can save life and relieve the sufferings of the afflicted, there are others whose general health is almost never seriously menaced, and they continue undisturbed at their usual occupations. In my own cases the degree of suffering and invalidism was altogether greater in the females than in the males. Tuberculous infection was more common with them, while nephralgia or pyonephrosis from calculus was often met with in men. With two exceptions, every single case of unequivocal remittent pyonephrosis in the female ever coming under my care succumbed, while no case in the male, seen by me, has yet passed away from the effects of this lesion.

As to the acute or chronic course of pyelonephrosis, we have ample proof of cases which extended over years, as well as others which run a short course.

Dr. H. O. Walker of Detroit has reported a case in a young man who was a sufferer for nine years, and another, a female school teacher, who had renal abscess for four years, before prominent symptoms were manifest. In fact everything points to suppurative kidney generally being an exceedingly chronic disease, where there is a simple vent for the purulent deposits and the disease runs into the ulcerative stages. Much depends on the patient's age, general state of health and environment in the evolution of the disease.

There are certain individuals of vigorous health, with only one localized abscess of a kidney, who may pass through life without any symptoms of it, or at least until by some application of violence, exposure

or indiscretion a fresh inflammation is set up; while there are others, in whom, from the beginning, indications of the lesion are quite clearly manifest. Of the former, Guyon records a case of a middle-aged man who for several months complained of occasional pains in the right side. His uranalysis was negative. He was later cut off by intestinal disease, when, on autopsy, it was found that the right kidney was the seat of a vast abscess.

Subjective symptoms.—The most common subjective symptom of renal lesion, accentuated by the onset of acute changes, is that generally known as renal colic, neuralgia of the kidney, or nephralgia, dependent on mechanical obstruction. The onset is usually sudden and the agony great. It does not appear that the renal parenchyma is richly endowed with sensory nerves; or at all events we have no evidence of stone or inspissated pus being present until it is forced out of the cortex and chokes up the pelvic outlet of the ureter. In these attacks the constitutional disturbances are extremely depressing until the pent-up decomposed urine, gravel, pus and detritus are washed away through the bladder and urethra. A patient, the subject of one attack, is quite certain of another if prophylactic measures are not instituted.

It is now well known that we may have suppurative degeneration of the kidney from ascending infection, chiefly of two varieties; one from gonorrheal infection, something very unusual, according to Senn, and in my own experience; and the other from the advance upward of those pyogenic bacteria, which are consecutive to the mechanical impediment to the passage of urine, by urethral stricture, prostatic hypertrophy, calculus, impaction or ureteral stenosis.

Tuberculosis is one of the most serious of the infective maladies that seize on the kidney. Bearing in mind then, the more ordinary causes of suppurative kidney, we will examine carefully for their indications as revealed through the subjective symptoms which belong to each, not omitting to inquire as to the possibility of trauma in the rôle of causation.

We will find in many chronic cases that the patient complains of pain *in the back;* always on one side more than the other, and extending down over the course of the ureter along the flank to the bladder. Polyuria, cystitis and vesical tenesmus are invariably present in advanced cases. In a few I have witnessed repeated attacks of neuralgia, involving the genitocrural, the iliohypogastric and sciatic nerves. But the symptoms may widely vary in renal suppuration, and in certain types we may have none of a pronounced character at all; certainly at times, not for long intervals. In certain individuals the agonizing cystic irritation coincident with pyonephrosis is almost constant; there is no let-up night or day; the hot ammoniacal, putrid urine coming down from the kidney has destroyed the vesical mucous membrane; the bladder is thickened and contracted, and no sooner has it drained off its burning contents than the patient is again seized with violent and protracted vesical tenesmus.

In tuberculous patients "pain in the side" low down with well marked evidence of cystitis, is an extremely suspicious symptom of renal abscess. Most women, the subjects of pyonephrosis, with few exceptions, will attribute all their symptoms to "womb disease," or to the "change of life," especially when they are about middle-age.

Another noteworthy symptom is an intermittent sensation of burning heat extending from the arch of the eighth rib down along the side into the hypogastrium. When septic toxemia is pronounced, rigors and sweats alternate.

These symptoms may be further divided, 1, into the constitutional and the local, and 2, into those which are constant or permanent, and 3, those which are intermittent or transient. The former are more frequently observed in connection with extensive interstitial pyemic infarctions, from secondary infections or in blenorrhagic metastases, so graphically described by Sée; the latter we observe especially in connection with calculous impaction or temporary plugging of the ureter. But we will occasionally meet with instances of pyuria of unequivocal renal origin, with very slight inconvenience to the patient.

Pain *in the side* or pain *in the back* is commonly borne by women; that of itself, except in extensive renal suppuration is of no distinctive value as a symptom. In some we will find that our patients complain of a dragging pain and a burning sensation over the affected organs. In most instances the patient is unable to lie on the same side, and when the body is at rest in the sitting or recumbent attitude the greatest degree of comfort is obtained.

In advanced cases the constitutional powers are seriously shattered, digestion is greatly enfeebled, the bowels are constipated and great bodily weakness is present. Along with this, a great change comes over our patient's whole being; broken down by long continued suffering, sleepless nights and want of food, they become melancholy, indifferent and irascible.

The most pronounced and prominent symptoms in many of these grave cases emanate from the bladder, cystic inflammation, ulceration and contraction. Probably at the outset when the urine is yet acid, its purulent admixture provokes little irritation, but as time progresses the purulent foyers in the kidney, or the putrid, ammoniacal, pent-up urine discharged into the bladder excites a septic inflammation, first destroying the superficial vesical epithelia, then the middle and deeper layers leading to an erosion and ulceration. In chronic cases inflammatory changes extend into the paravesical tissues, the vaginal, rectal, prostatic and seminal structures. The act of defecation or any severe straining produces a painful sensation over the hypogastrium, the rectum or perineum. The patient not only has polyuria and tenesmus, but usually has more or less urinary incontinence while on the feet. This is more pronounced in the female than in the male. Lumbago, sciatica and neuralgia down along the course of the anterior crural nerve and its divisions is a frequent symptom when renal tension is accenuated.

Physical examination; postural, surface and internal.—The state of the pulse or the degree of temperature are unreliable guides in a considerable number of pyurics. In some of my own cases the temperature was rather subnormal, while pus was draining away in great quantities. When the renal lesion is secondary to pulmonary tuberculosis, the thermal augmentation attends the hectic flushes. Colliquative and exhaustive perspiration is present in systemic invasion.

In all those about to be examined for renal suppuration it is important that the patients should be placed in different attitudes. The trunk should be well exposed below the mid-dorsal region.

In severe pyelonephrosis the kidney is enlarged and its volume and density increased, so that with few if any exceptions it will be found displaced downward and forward along the flank.

On palpation and deep pressure we will find on the affected side well-marked muscular rigidity, with a thickening of all the overlying tissues, and areas of more or less sensitiveness. Having taken advantage of gravity, as a primary step, the patient is first placed on the right side and then on the left, with or without a pillow under the lowermost side, as circumstances may require. Finally the patient is placed on the chest, with some central raised support under the abdomen in fat subjects, as recommended by Dr. Robert Morris.

By submitting patients to these tests and searching carefully for the diseased organ, in nearly every instance so far I have been able to detect a pyonephrosis without the clinching evidence of uranalysis. In some, its presence was so palpable as to render little more than surface examination necessary.

But when the right kidney is involved difficulties of great magnitude may arise, especially in the female; for this displaced, bulging mass of renal tissue may closely simulate perityphlitis, appendical abscess, pyosalpinx, abscess of the broad ligament, of Pott's disease of the spine, of localized malignant degeneration, etc. And I may add that without the microscope, in skilled hands, all our efforts to definitely and absolutely differentiate the one from the other, without mutilating the patient, would be utterly futile.

It is true that each of the above lesions pursuing a typical course is accompanied by a fairly uniform *ensemble* of symptoms; but the exceptions are only too numerous and we are often confronted by a most complex and embarrassing state of things.

The details of the physical examination of the subject have so multiplied of late years that it will be impossible in the present instance to but very briefly refer to a few of their more salient features as they apply to the detection and recognition of abscess or ulcer of the kidney. So late as twenty years ago but little was known of them and as a precise and definite means for the recognition of urinary lesions they constitute practically a new science.

They embrace an external and internal examination, an exploration of the tubular passages and a careful inspection of the urinary excretions. For obvious reasons, we must make a wide departure in our examination of the sexes.

When we suspect the kidney as the seat of suppurative changes, palpation, percussion and auscultation will serve us as valuable aids.

For a proper examination the patient should always be placed on a firm, flat surface. A strong table with a blanket over it answers better than any bed. In some, who have marked muscular spasm, an anesthetic might be desirable, but the renal lesion usually interdicts its use. It is always well to commence our examination with the patient lying flat on the back. In some the renal enlargement and tenderness may be readily detected in the prone position, but in others of stout build, or in whom the kidney remains fixed deeply in position, we must resort to other accessory expedients. We may flex the lower limbs on the trunk or raise the shoulders.

In all, with few exceptions, we will find a thickening, induration and spasm of the muscles in the lumbar and iliac regions of the side involved, along with tenderness over the course of the ureter and in the hypogastrium.

In woman we will easily determine varying degrees of renal displacement more definite and positive in some than in others; in all however more frequently than in men.

Firm renal pressure properly directed will quite invariably elicit definite indications of suppuration of the organ, especially when there is occlusion of the ureter and the pus cysts are large or multiple.

In order to proceed with success in our manipulations, bearing in mind the probability of renal displacement or unusual mobility, it will be well to first as definitely as possible determine the position of the diseased organ and its relation to others in its proximity. This having been effected, the palm of one hand is placed firmly over the left or right lateral lumbar region, while the other is pressed gently over the lax abdominal muscles in a direction approaching the other. Between the hands the kidney should engage. If a sensation of deep-seated pain or soreness is not at first elicited, then the pressure over the hypogastrium should be made in an intermittent manner—an up and down motion and with more force.

As a rule, in cases of renal suppuration, simultaneously or soon after pressure is applied the patient complains of pain along the ureter into the bladder.

Examination by the orifices or tubular passages.—This is conducted by two methods: 1. Digital examination *per rectum et vaginam*. 2. By reflected light, the cystoscope or ureteral catheters. For various reasons, except in special cases, a rectal examination will throw but little light on any lesions along the urinary tract, except when the prostate or bladder is involved, or in those wherein differential diagnosis is necessary. With the female maiden, however, as an avenue to the access to the pelvic organs, it is different.

The vagina of a multiparous woman will permit, generally, of such an examination as will enable us to determine the presence or absence of pelvic phlegmasia or tumors, although it is well to remember that these may coexist with renal suppuration. Endoscopic examination of the urethra and bladder is undoubtedly one of the greatest aids in the diagnosis of lesions involving these organs. Valentine of New York has demonstrated its positive value in the detection and study of lesions along any areas of the urethra and bladder, and in fact, in our time, no genito-urinary surgeon is regarded as at all properly equipped without the cystoscope and ureteral catheter. But its intelligent use requires special skill and extended experience; besides, it is almost unnecessary to add that in the presence of stricture, enlarged prostate or a tortuous canal, its employment is quite impossible.

Willy Myer, and Kelly particularly, in America, have shown us the possibilities of ureteral catheterization in the male and female. Everyone concedes the practicability of introducing a ureteral catheter by way of the floor of the healthy female bladder in many, although not a few gynecologists claim that it is utterly impossible in a considerable number; in the patulous, partly stenosed or tortuous ureter. Skene admits that it does possess some value as a remedial agent, but denies its utility for general diagnostic purposes. It involves always a considerable urethral dilatation and more or less trauma of the sensitive vesical and ureteral mucous membrane.

It seems, therefore, quite inconceivable that the ureteral catheter can have anything other than a very limited application in the male subject; probably none at all in the presence of cystitis, or such organic changes in the bladder and ureter as have been recently so well described by Myles of Dublin.

Exploratory incisions.—Any procedure which involves a mutilation of the body, in the ascertainment of diagnosis, is a humiliating confession of failure. Except, indeed, in cases of very rare occurrence, presenting very grave and complex features, it is something of more than doubtful propriety; in fact, it should be ruled out.

The time is past when anyone should further impose on our credulity by informing us that "exploratory incisions opening into the abdominal cavity are harmless."

When, however, one is in doubt after having exhausted all other diagnostic methods known to science, then it may be justified, when we contemplate combining simultaneously therapeutic measures with diagnostic exploration.

(To be continued.)

ALCOHOL IN MODERN MEDICINE, OR ITS PRESENT POSITION AS A REMEDIAL AGENT IN THERAPEUTICS.

PRELIMINARY REPORT AND BRIEF SUMMARY OF A SPECIAL JOINT COMMITTEE OF THE AMERICAN MEDICAL TEMPERANCE ASSOCIATION AND THE AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY, FOR A SPECIAL STATISTIC REPORT OF THE PRACTICE AND OPINIONS OF AMERICAN PHYSICIANS ON THE USE OF ALCOHOL IN MEDICINE.

Presented to the Section on State Medicine, at the Forty-eighth Annual Meeting of the American Medical Association held at Philadelphia, Pa., June 1-4, 1897.

BY ISAAC N. QUIMBY, M.D., CHAIRMAN.
JERSEY CITY, N. J.

The following questions soliciting answers from members of the medical profession of the United States were printed and distributed by a committee of physicians representing The American Association for the Study and Cure of Inebriety. The circular which explains these questions is herewith presented:

JERSEY CITY, N. J., March 1, 1897.

My Dear Dr. ——

We shall be pleased to have you write out your experience and views in answer to the enclosed questions and return to me at your earliest convenience.

We wish to obtain with some exactness the present status of the use of alcohol in medicine and the views of the leading medical men in this country.

The results of this inquiry will be presented at the June meeting of the AMERICAN MEDICAL ASSOCIATION at Philadelphia.

Thanking you in advance for your labor and assistance, I am, very truly yours. I. N. QUIMBY, Chairman.

T. D. CROTHERS, M.D.
F. H. KELLOGG, M.D. } Committee.
L. D. MASON, M.D.

Explanatory remarks.—Up to this time the answers to the fifteen questions give a summary of the opinions of one hundred and twenty medical men scattered more or less widely over the United States. The larger proportion of these are experienced and old practitioners, many having practiced fifteen, twenty-five and thirty years and averaging twenty years of varied and extensive medical experience; nine from forty to fifty and three from fifty-five to sixty years. It is but just to the committee to state that the question blanks were distributed without any knowledge of the possible outcome of such distribution and with a few exceptions none of the committee knew the views, on the questions submitted, of those to whom the blanks were sent; so that the replies to the fifteen questions may be inferred to be a fair representation of the position which alcohol holds as a drug in modern therapeutics, as far as these replies can attest to the fact. About six hundred of these questions were issued by the committee and 120 replies were received, the total contributing a valuable addition to the views of the profession today on the position of alcohol in modern therapeutics. The committee have endeavored to procure a candid opinion from all the physicians applied to and have therefore reported in full, and in the words of the writer his opinion *pro* or *contra*, so that fair conclusions may be drawn by those who may be interested from the statements given *verbatim* and not in the language or interpretation of the committee.

The answers will speak for themselves, but in order to call attention to some of the more salient points in the questions and in the answers to them the committee feel obliged to make a brief summary of the facts presented.

1. To what extent and under what circumstances do you use alcohol in your practice, either hospital, dispensary or private?

The term alcohol is used in a general sense so as to mean the drug itself, pure and simple or tinctures, malt and vinous or spirituous liquors containing a greater or less per cent. of alcohol. We infer from the answers that this fact was understood, at least in the majority of cases. To classify the replies to these questions we divide them into, 1, those who do not use alcohol in any form; 2, those who have used alcohol only as an *external application*; 3, those who have used alcohol to a limited extent and under certain conditions and restrictions and who were conservative in their views, and finally, 4, those who have used it freely and liberally "to any extent and under all circumstances when a diffusible stimulant was indicated." In these four classes we find two extremists; *non-users in any form* and those who use *alcohol freely in their practice*. A careful study of the question blanks shows that the third class, those who use alcohol to a limited extent—the conservative class—are in a large majority. But if we carefully study the answers of this class it will be noted that the use of alcohol as a remedy is limited in its application to a certain type of diseases and that its use is decidedly restricted as compared with its use twenty-five or thirty years ago. It is certainly not the "universal panacea" for "all the ills that flesh is heir to" as it was then, and its use by those who advocated its advantages is restricted to a certain class of cases—we refer to the replies. The testimony on this point is quite conclusive.

In the Matteawan State Hospital, with an average of 590 inmates, for twelve months the consumption was sixty gallons of whisky and thirty gallons of wine. In one hospital 110 patients (mostly surgical) averaging sixteen days each, used less than one-half a gallon of brandy (Galloway, Chicago). In the Portland Sanitarium, Oregon, it is not used at all. It seems to be very seldom used in dispensary practice. In hospitals it is used in emergency cases, shock, before or after operations, in adynamic state of fevers and pulmonary diseases. Although the replies are not very full on this point we may venture to remark that the "institutional use" of alcohol as a remedy is more limited than formerly. It is well to note that not only the nature of the disease, but locality, climate, character of the population, tenement or otherwise, season of the year, occupation and habits of the people, nationality of the person and other conditions, severally seem to have an influence in determining

whether or not the physician shall use alcohol in this or that particular case.

2. To what extent and under what circumstances, according to your observation, is alcohol used in hospital, dispensary or private practice of physicians of your acquaintance?

While the answers as to the personal use of alcohol in the respective practices of those replying are in favor of its gradual disuse or limited use, the answers to Question 2 are, in many instances, unsatisfactory, where the question is answered; but on the whole the testimony is in favor of the more guarded and scientific as well as limited use of alcohol as a remedy. But the fact remains that a large proportion of physicians use alcohol in some form as a remedy in their practice, and some of these *do not* guard its administration with the same restrictions and safeguards as they do other drugs. We claim that alcohol should be given with the precautionary measures that surround the administration of other narcotic poisons, opium and its alkaloids, cocain, etc., and to which the patient is in danger of becoming habituated. (See examples of answers.)

Examples of answers to Question 2.—As a diffusible stimulant and in adynamic stages of acute diseases; in surgical shock, in threatened collapse from any cause; in delirium tremens to control fibrillary spasms; after severe surgical operations; as officinal tinctures and externally; in tedious convalescence after fever or debility from other causes; fainting, collapse, shock, anesthesia narcosis; temporary stimulant only, as in shock; sometimes in intestinal disease, as a substitute for food; in all cases of sepsis; all diseases of a rapidly acute asthenic type; in diphtheria, do not use it in chronic diseases of the young and middle aged; large experience in chronic pulmonary disease, in the majority of cases California red wine preferred; in prostration stage of typhoid and pneumonia, never as a routine remedy; low fevers, debility and exhaustion; in all cases requiring prompt stimulation; sometimes for its anesthetic effect in hopeless cases, adynamic stage of typhoid fever or pneumonia or diphtheria, and old persons; phthisis and pulmonary edema, pneumonia; in surgical work do not use one-half pint of whisky a year, had 278 operations; heart stimulant, old persons as tonic and stimulant; with ammonia carbonates in pneumonia, and in malted milk in malarial and typhoid fevers; acute infectious disease; exhausting chronic conditions; snake bite (as antidote); malignant diphtheria; bronchial catarrh of the aged; as force food, hepatic functional stimulant, as a vasomotor sedative; in shock, otherwise very little internally, and as an antiseptic in gargles, mouth washes and lotions; in pneumonia and typhoid fever; when the case is hopeless and life can not last long, for its anodyne and soporific effect, euthanasia; typhoid fever and convalescence; as an emergency stimulant; as an antiseptic (never as a stimulant), rattlesnake bite, typhoid and typhomalarial fevers; shock, convalescence from protracted and wasting disease; old inebriates (alcoholic habitués), nursing mothers (galactagogue), acute asthenic diseases of children; in shock and before chloroform anesthesia; low type of fevers.

3. What drugs in your opinion, may be advantageously or satisfactorily substituted for alcohol in medical practice, and what, in your opinion, is the comparative value of alcohol and of strychnin, used by the mouth or hypodermically?

This is a very important, as well as interesting question, asked with a view to determining the favorite heart tonic of practitioners, as well as their views concerning the same as a substitute for alcohol, particularly with reference to strychnin. The answers will therefore bear close scrutiny and may be studied with advantage as they are full of suggestion and practical value. With some, strychnin "is of greater value and more certain in results" than alcohol and preferable to it; with others it can not take the place of alcohol and acts in a manner quite different from it. Although the majority of the answers acknowledge the usefulness of strychnin in cases of alcoholism, it is *par excellence* the heart tonic and antidotal to the evil effects of alcohol, as well as a substitute for it. All the answers will well repay a careful study as to the relative merits of alcohol and the various nerve and heart tonics, strychnin, nitroglycerin, etc., and the respective conditions in which each is more especially useful as compared with others.

4. Have you ever studied the treatment of diseases of a similar character *with and without alcohol*, and what did the record of cases so treated demonstrate? Was the testimony in favor of the alcoholic or non-alcoholic method of treatment? Can you cite cases?

Another question of great interest and one that has divided the profession at home and abroad so far that non-alcoholic treatment of cases is not uncommon, and special hospitals have been established in which alcohol is not used as a remedy. The reports are not as full as we might desire. One physician reports a mortality of 7 per cent. in typhoid fever with alcohol, 1 per cent. without alcohol. He states, "I have treated 283 cases of typhoid without alcohol and lost only three cases, and these were marked cases" (Bleighton). Another reports, "Yes, surgical cases and I am inclined to the non-alcoholic treatment" (Bovie, D. C.) Another does not recognize an alcoholic or non-alcoholic method of treatment. Another, "The advantage of alcohol in chronic pulmonary conditions." Another, "I have made a special study of 100 cases of typhoid without alcohol and 100 with, and the results are greatly in favor of treatment without alcohol."

With regard to the alcoholic or non-alcoholic treatment of diseases, excluding the replies of those who are doubtful or have formed no definite opinion on either method of treatment, the profession seems to be nearly equally divided with the preponderance in favor of the non-alcoholic method. Thus, twenty-four expressed decided preference for the use of alcohol in the treatment of certain specified conditions of disease, thirty-eight markedly pronounced in favor of the non-alcoholic method, and the balance had formed no definite opinion, or were not positively in favor of either method, so that we may state from the records that the answers decidedly favor, when positively given, the non-alcoholic method of treating disease. It should be also stated that when alcohol is used its advocates give specific and intelligent directions as to the diseases and conditions under which it is to be used, and we may state that a careful study of these diseases and conditions limits the sphere of alcohol as a remedy to certain diseases and certain definite stages of those diseases, and practically, therefore, condemns indiscriminate use and indefinite dosage as not only unscientific, but positively harmful.

The questions and replies in detail are appended and respectfully commended to the thoughtful.

5. What proportion of persons among the laity, according to your observations, make use of alcohol as a domestic remedy, and what form of alcoholic beverage is most commonly used?

An analysis of the answers to this question shows that the great majority, fully 90 per cent. of our families, keep alcohol in some form, either whisky or brandy, and resort to it as a domestic remedy for all slight or severe, real or imaginary ailments. A fact also brought out is the use of alcohol as whisky or brandy, for painful menstruation, and another fact the large consumption of alcoholic liquors in the shape of patent or proprietary medicines, medicated wines, malt extracts, tonics, tinctures, etc. The question arises how far the family physician is responsible in his relation to the family as medical adviser, for the almost universal use of alcohol in some form as a domestic remedy, and what is his duty in the premises, in pointing out the fact that alcohol is not a universal cure-all as it is supposed to be, and that it is often positively detrimental in its effects in diseased conditions.

6. To what extent, in your opinion, does the moderate but habitual daily use of alcoholic beverages produce disease?

As to the term "moderate" as applied to the use of spirituous liquors, there is great difference of opinion. We think the term is an unfortunate one, indefinite, unsatisfactory, but we have used it in a conventional way, and as it is generally used, leaving to each one questioned the privilege of interpreting the term according to his own views and experience. The "habitual daily use" is a phrase more definite and ought to be answered in a satisfactory manner.

In the opinion of some, "moderation" means four ounces of whisky, or a glass or two, or two or three drinks daily, or two or three ounces of spirits daily, or one-half ounce distilled liquor well diluted; or three glasses of malt liquor a day can do no harm, except whisky; one writes, no harm, except in gout; another, no harm after meals, properly diluted in moderation. No harm, beneficial after middle life, in moderation, etc. What constitutes moderation in the opinion of this section? Those opposed to habitual daily use of alcoholic beverages in moderation, or at all in any quantity, in brief assert that it lowers vitality and resistance to disease, increases mortality and shortens life expectancy; that its use is prejudicial to physical, mental and moral tone, and so, indirectly, fosters habits of life that lead to injury and disease; that moderate use of alcoholic stimulants leads to excessive use or, as one puts it quaintly, "Pigs grow to hogs, and hogs root up the garden." It creates an artificial desire and, as we have said, paralyzes the moral sense and so leads to disease, *i. e.*, leads to gout and forms of sclerosis, develops predisposition to disease; where diathesis exists, prefers to give alcohol —to a non-alcoholic—to get definite results; moderate use of alcohol produces a bias in favor of disease, tends to fatty degeneration of tissue, etc.

The majority are seemingly opposed to the so-called moderate habitual daily use of alcoholic beverages and believe that such use directly or indirectly produces disease.

7. In your observation what are the prevalent forms of disease among those who habitually use alcoholic beverages in moderation, and are they less or more susceptible to disease than total abstainers, or is the relative frequency the same in both classes of persons?

Moderation means more than is consistent with good health; on an average two ounces of whisky; one pint of beer; here are a few of the replies in a condensed form: In cardiac, nephritic, hepatic disorders, and subsequent fatty degeneration; gastric disorders; neurasthenia, insanity, nephritis, hepatic cardiac disease, obesity; susceptibility to disease, rheumatism; dyspepsia; Bright's disease; susceptibility to disease; diseases of stomach, liver and kidneys; susceptibility to disease, gastric, renal, hepatic; rheumatism, gout and mania; susceptibility to disease; "alcoholic pneumonia," with grave prognosis; users more susceptible to disease than total abstainers; do not believe that four ounces daily in adults will produce disease, or that moderate drinkers are susceptible to disease; the relative frequency of disease is the same in moderate drinkers and abstainers; the term "moderate" is relative, and moderate drinkers as a rule become excessive drinkers and so disease results; habitual beer drinkers are especially short lived.

It is interesting to note in consulting the various answers that the majority, however they may differ as to the moderate habitual use of alcoholic liquors being a factor in directly producing disease, agree that persons so using alcohol have a lower power of resistance to disease, and are more susceptible to disease than total abstainers, which is an important fact brought out and substantiated by these statistics.

8. Do you think the use of alcohol in any form as a domestic remedy is increasing or decreasing, or have other narcotics been substituted?

About 50 per cent. of the answers assert that the use of alcohol as a domestic remedy is on the decrease, and about half of these answers state that other narcotics have been substituted, notably the coal tar derivatives, phenacetin, antifebrin, etc. About 10 or 12 per cent. assert that the use of alcohol is increasing as a domestic remedy. One or two replies from southern physicians attribute this to the lax administration of the liquor law in their respective States. About 6 or 8 per cent. believe that the use of both alcohol and narcotics is on the increase. A small percentage deny that the use of either is on the increase or decrease, but about stationary. Other views are also given, namely, that the lighter forms of wine and beer are substituting—distilled liquors—and that the higher and intelligent classes of society are becoming more temperate and that *hard times* favor decreasing use of liquors, wines, etc. The balance, probably 25 or 30 per cent., do not answer this question.

9. What proportion of the laity, according to your observation, make use of alcohol as a beverage?

About one-third do not answer this question, or do so indefinitely. From the replies of those who do answer, about two-thirds of the whole number, the following conclusions are drawn:

(1) That from 50 to 60 per cent. of adult males use malt or spiritous liquor as a beverage.

(2) That 10 per cent. use distilled liquors and 90 per cent. malt.

(3) That the proportion of males to females is as 5 to 1—the tables on this point are not very definite or full.

(4) Its use is less prevalent in rural districts and more prevalent in large cities, especially in seaboard and manufacturing towns.

(5) The number of habitual drinkers to occasional drinkers is as 1 to 5.

(6) The use of wine, spirits or beer is more common among foreign born than native population.

(7) The environments,occupation, nativity, locality, sex, age, etc., all influence the use of alcohol as a beverage.

(8) Different States and localities show a marked difference; one states that "in Kentucky *everybody* drinks whisky." "In a prohibition town in Arkansas, only 2 per cent. use alcoholic stimulants as a beverage; this is a prohibition town, 'and prohibition prohibits.'"

10. For what length of time have you given especial consideration to the effects of alcohol as a medicine?

Those who had observed it less than ten years, 9; from ten to fifteen years, 24; from fifteen to twenty years, 3; from twenty to twenty-five years, 14; from twenty-five to thirty years, 12; from thirty to thirty-five years, 2; from thirty-five to forty years, 1; from forty to forty-five years, 6; from fifty-five to sixty years, 3; in all, 74. No answer was given by the balance.

Of the seventy-four recorded, over 50 per cent. had given their entire professional life to the study of the problems involved in these tables, such professional experiences extending over twenty years in all cases. The inference must be that the testimony here submitted is given by professional men and after long and practical experience.

11. To what extent, in your opinion, does the medicinal use of alcohol encourage, either directly or indirectly, the habitual use of alcohol by the laity, and, as a consequence, inebriety?

We may classify the answers as follows: Those who believe the medicinal use of alcohol *does not* in any way lead to its habitual use and as a consequence, inebriety. Some thirty so affirm, as follows: Properly used; in acute disease; properly used; no, promiscuously, yes; libel on the profession; excuse (unwarranted) of inebriates; argument of extremists; properly used, no; patent medicines, etc., yes; regular prescription, no; "advice of physician" an excuse; not if by a temperate doctor; yes, if by a whisky-drinking doctor who gives it on *all* occasions, for *all* conditions, in *all* diseases; all drunkards are liars; statements not reliable; never after 50 years of age; yes, indiscriminately given; no, in cases of temperate people and children. Twenty-four say "yes, but to a very slight or moderate degree." Thirty-four say "yes, in some instances"; about one in fifteen, "principally patent medicines"; careless prescribing; verbal directions more or less indefinite; yes, in chronic, no, in acute cases; heredity; idiosyncrasy; one-half of 1 per cent.; especial tendency; four out of five; only six cases in thirty years; yes, great numbers; to a large extent in country practice, where the patient is his own physician or left to his own devices.

The consensus of opinion would be: 1. That the medical use of alcohol develops the habitual use and from this inebriety under certain conditions. 2. That the risk of such a result was much lessened if the patient was previously temperate and of good family history, over fifty years of age, and the case one of acute disease—also in the case of children. 3. If indiscriminately and carelessly given, especially in chronic diseases, history of heredity or peculiar idiosyncrasy, the patient continuing to use the remedy after the physician ceases to attend him and yet with the apparent sanction of the physician; under such conditions the habitual use of alcoholic liquors is established and in a certain proportion of cases results in inebriety.

12. When you prescribe alcoholic beverages as a medicine, do you specify the form, the quantity, the period, and especially the length of time in which it is to be used as a medicine? In your opinion, are not specific directions desirable and oftentimes important in the use of alcoholic beverages?

All answers are in the affirmative; a few of them specify kind, quantity and time; same care as with other medicines; explicitly; yes, emphatically, yes; absolutely so; important; yes, disguised with other tinctures; I do not give alcoholic stimulants, if I did I should prescribe alcohol (to secure definite dosage); limited period and specific directions.

From the testimony here given it would be in evidence that physicians as a rule do not prescribe alcoholic stimulants, carelessly or without restrictions. Our remarks apply to conscientious and intelligent practitioners and not to "intemperate doctors."

13. In your opinion, is the medicinal use of alcohol increasing or diminishing?

Fifty-six believed the medicinal use of alcohol (meaning thereby alcoholic and malt liquors, etc.) is decreasing; some assert that *legitimate* use only is decreasing, not the *illegitimate* use; also that much depends on the doctor of a particular locality; it is given with more discrimination; malt extracts and light wines are more used; various wines are drugged and disguised and sold by the wholesale drug houses as tonics, etc. About a dozen believe the use of alcohol is neither on the increase nor decrease. Thirteen believe its use is increasing, not probably in its purer forms, or as stated, in "medicinal wines," malt extracts, tonics, tinctures and alcoholic preparations of various kinds. The rest give no data. The preponderance of opinion seems that there is a decrease in the use of alcohol as a remedy and that when employed it is with more limit and discrimination than formerly.

14. What form of alcoholic beverage do you generally prescribe—distilled or malt liquors, or the various wines—and under what conditions and for what purposes?

About one-third do not prescribe alcohol in any form, under any conditions.

The remaining two-thirds use distilled liquors in some form, as a diffusible stimulant or "force food"; whisky seems to be the favorite, brandy occasionally, and one or two recommended *pure alcohol*—diluted with water—as susceptible of more definite dosage and results; malt liquors, as food in certain wasting diseases and as a bitter tonic; some prefer "malt extracts"; one physician, *old Jamaica rum* to whisky or brandy. The majority never prescribe alcohol in any form as a *beverage* and limit its use to the acute stages of disease, and others to the period of convalescence. Exception made in cases of aged persons for its continued use as wine, red wine preferred by some, and California wine preferred. The "aerated" wines, champagne, etc., in certain conditions. Some never give it to intemperate persons and to alcoholic habitués, only in disease.

The general opinion favors alcohol in some form, under certain conditions *pro re nata*, but condemn alcohol as a beverage and its use in chronic diseases, except in exceptional cases, and deprecate its continual indiscriminate or unscientific use.

15. In your opinion, in the treatment of diseases, are the lighter forms of wine substituting the various forms of alcoholic beverages in which the percentage of alcohol is greater?

About 43 per cent, there is no change; about 35 per cent. think that there is; about 20 per. cent. do not answer or are indefinite; about 2 per cent. do not use wine medicinally. One of the latter class does not use it because a pleasing, and therefore dangerous, form, especially for the young, and apt to be used indefinitely; uses whisky and brandy *pro re nata* only, and not as a tonic. Another physician regards wine as absolutely worthless from a scientific and medical standpoint. Another states, other things being equal; a larger quantity of wine is given to produce certain results; when a smaller quantity of distilled liquors would do, the same quantity of alcohol is given, although the form, etc., in which it is given is changed.

In closing I wish to heartily thank those physicians who have so kindly responded to our committee's request, thus aiding us materially in our attempt to open up a comparatively unexplored field of inquiry into the power of alcohol to injure the human tissue and retard cell growth and development.

We are just at the beginning of a new era along the line of scientific investigation and many physicians who now prescribe and advocate the use of alcohol and its derivatives will look back with astonishment in the early dawn of the new century at the erroneous position they had occupied on this important and far-reaching question.

It is to be regretted, however, that there is such a diversity and divergence of opinion in reference to a substance (alcohol) which is in such universal use, and with such seductive and destructive tendency.

It is also to be regretted, judging from a number of answers received, that many physicians are in the habit of prescribing alcohol and strychnin (remedies diametrically opposed in their action) as a stimulant or heart tonic.

The use in combination of two powerful drugs, so diverse and antagonistic in their action as alcohol and strychnin, is quite unscientific.

Now it is clearly demonstated that alcohol acts on the brain mainly and nervous system, in fact is a brain poisoner, perverting and deranging the physical, mental and moral faculties, while strychnin is a *true* tonic and acts mainly upon the spinal cord, with none of the destructive tendencies of alcohol.

You will scarcely find a physiologic opponent of the non-alcoholics in medicine who does not make a handle of the word stimulant, while advocating the use of intoxicating drinks Every one acquainted with the nature of life is aware, that without stimulants, life is impossible for any length of time. Food, water, air, light, heat, etc., are not only stimulants of life, but habitual, healthy and absolutely necessary stimulants of combustion. The lash of the whip, the prick of the needle or bayonet or the sting of the bee, etc., are also stimulants, but they are neither pleasant, necessary or wholesome. So alcohol in this sense is a stimulant.

Therefore the opponents of non-alcoholics argue, though it may not be necessary, it is hence a beneficial auxiliary of life. Disregarding and concealing the fact that alcohol is not only a stimulating irritant, but a corrugator and paralyzer of the living tissue, as well as a narcotic poison. The excitement of all natural stimulants is not necessarily followed by a corresponding depression, but it is the inevitable result of alcohol and all other narcotic stimulants that they are followed by depression, more than equal to the excitement produced, so that a person using narcotic stimulants is more depressed than ever and therefore is more inclined to repeat and increase the dose. This is the unsuspected pitfall into which thousands of the unwary plunge.

But amid all the confusion and doubt and darkness and superstition, it is gratifying to know that all physicians and scientists, physiologists and chemists, who have recently made and are making scientific investigations, with the modern instruments of presision, in reference to the action of alcohol on living growing tissue have arrived at about the same conclusion as is proven by the recent experiments in the physiology of alcohol by Prof. F. Hodge of Clark University, etc., *i. e.*, that it retards, perverts and is destructive, either in large or small doses, to normal cell growth and development.

Allow me to diverge from the strictly scientific aspect of the question. It should concern the medical profession to know that juvenile crime is increasing, both in this country and in Europe. The juvenile criminals are undersized and sickly, and many have a feeble intellect, bluntness of feeling or unstable will. One would not have to draw much upon his imagination to attribute or connect the cause for this increase and degeneration to the increasing use by the parents of alcohol and other narcotics. The operation of heredity has fastened these defects upon them, as a rule, so that they must be regarded as belonging to a decadent class.

This is a significant fact which the medical profession or the public can not safely disregard.

ALCOHOL VERSUS ANIMAL POISON.

Read before the American Medical Temperance Association, in the Section on State Medicine at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

BY CHAS. H. SHEPARD, M.D.
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Animal poison is by no means uncommon, and so quick and mysterious is its action that a prompt remedy is a vital necessity. There is good reason to believe that the numerous remedies that have been recommended from earliest times as antidotes for animal poison are worthless, as they have not the properties commonly ascribed to them. The paucity of remedies is so great that alcohol is the one which comes most quickly to the mind of those who have been taught in the traditions of the past, and who are not fully aware of its action on the human system. We shall endeavor to show that the action of alcohol is not helpful; on the contrary it is really detrimental, and also that there is a better way out of the difficulty.

If we get a splinter in the body, vital energy is aroused to get rid of the offending substance, inflammation is set up and sloughing goes on until the splinter is voided. If the splinter is covered with acrid material, the same process is intensified and nature endeavors to eliminate the offending substance through the natural excretions. Upon the peculiarity of the material depends the direction of this elimination.

It is well known that some poisons are thrown off by the kidneys, some by the lungs, while others again are attacked by all the emunctories. The difference in the power of the system to absorb different substances, appropriate whatever can be utilized, and

throw off whatever can not be used, is sometimes called idiosyncrasy, but more properly it may be called vital resistance, and upon the integrity of this power rests the ability to combat disease in all its forms, whether it be the absorption of any animal virus or the poison resulting from undigested food. This ability is in proportion to the integrity and soundness of every tissue and organ of the body. This may be illustrated by the fact that with a person suffering from kidney disease, which necessarily impedes elimination, the ordinary effects of a poison are intensified; therefore whatever aids in the promotion of good health, or in other words, the normal action of all the functions, will contribute to the safety of the individual in any and every emergency.

When a person dies from the effect of poisoning, it is simply because the system was unable to eliminate the offending substance and was exhausted in the effort. There is a tolerance of some substances which frequently results in chronic disease, and again it is shown in what is called the cumulative effect or acute disease.

Those who would hold that a substance is at one time a medicament, and at another time a poison, have much trouble in drawing the line between the beneficial and the poisonous effect. The idea that poisonous substances act on the system is responsible for many grave mistakes, whereas always and under all circumstances it is the system that does all the action.

There might be some excuse for the idea that disease is an entity, from the facts that have been brought to light by the germ theory, but this theory is of recent date, while the entity theory is as old as superstition.

Snake poison, which may be cited as a type of other animal poisons, takes effect through the circulation, and acts by paralyzing the nerve centers and by altering the condition of the blood. In ordinary cases death seems to take place by arrest of respiration from paralysis of the nerves of motion. The poison also acts septically, producing at a later period sloughing and hemorrhage.

Dr. Calmette, a noted French scientist, claims that what is poisonous in the snake's bite, is not the venom absorbed into the blood, but a principle which the blood itself has developed out of the poison. This would necessitate very quick action when the poison is inserted in one of the large veins, as that is followed by instant death.

The following cases fairly represent some of the tragedies that are occurring in our everyday life.

A man 60 years old falls and dislocates his finger, he goes to the hospital, where in a short time he dies from blood-poisoning. . . . Another man 48 years old, many years a wine merchant, whose great toe was severely crushed by a heavy man stepping on it, was taken with blood-poisoning and in spite of all treatment, even to the amputation of the leg, he soon succumbed to the disease. . . . A young woman 24 years old, picks a pimple on her chin and at once her face begins to swell. In vain was all medical treatment, for in a few days she died in terrible agony. . . . About a year ago there died in Brooklyn, N. Y., a physician in his 38th year, who six years previously received a slight scratch in his hand while performing a postmortem examination. All that medical science could suggest was done to no avail. . . . In the summer of 1896 a young woman 22 years of age was bitten on the leg by an insect. Several physicians were called in but their treatment gave no relief; blood-poisoning set in; it was decided to amputate the leg, but before it could be done she died. . . . In July, 1896, a veterinary surgeon 34 years of age, while removing a cancer from a horse pricked his finger with his knife. The wound was so slight that he forgot all about it. A few days later blood-poisoning set in and in a short time his end came. . . . Some forty years ago a man named Whitney was teasing a rattlesnake in a Broadway barroom, was bitten by the animal and, though whisky was poured down his throat by the quart, all was in vain and he soon died.

Such results seem entirely unnecessary were the proper course pursued, and at the same time they are a fearful commentary on the medical resources of the day.

The latest researches in regard to alcohol reveal it as a poison to the human system in whatever way it may be diluted or disguised. Its effect is always the same in proportion to the amount taken. It is impossible to habitually use it in any form, even in small quantities, without disease and degeneration resulting therefrom. When taken into the stomach the action is the same as with any other narcotic; the meaning of this word is *to become torpid*. It benumbs the nerves of sensation, and thus the vital resistance to any offending material is reduced, and while the patient *feels* less of any disturbance the real harm goes on with accumulated force because of the lack of vitality and non-resistance of the nervous system. This loss of control is readily seen in the conversation of one who has taken what is called "a little too much." The inhibitory power of the brain is diminished.

When the body is in the throes of a vital struggle with a virulent poison it would seem to any unprejudiced mind, the height of folly to further weaken the vital resistance by the administration of any narcotic, and especially alcohol.

The eminent German, Professor Bunge, says, "All the results which on superficial observation appear to show that alcohol possesses stimulant properties, can be explained on the ground that they were due to paralysis." . . . Professors S. Weir Mitchell and E. T. Reichert on "Researches on Serpent Poison," make this notable statement: "Despite the popular creed, it is now pretty sure that many men have been killed by the alcohol given to relieve them from the effects of snake bite, and it is a matter of record that men dead drunk with whisky and then bitten have died of the bite." . . . Says Dr. Richardson, "Even a small quantity of alcohol affects the acuteness of vision."

Testimony of the most reliable character, to the fact of the injurious action of alcohol in disease could be quoted *ad libitum*.

As a great contrast to the weakness of the mass of our people who are drug-takers and alcohol-consumers, and who are liable to almost any epidemic that comes along and quickly succumb to a serious injury, may be mentioned the Turkish soldiers of today, who know nothing of drugs as we use them, and never use alcohol in any form. During the late controversy with the Greeks, one of them was reported as having been shot in the stomach, remaining in the ranks and afterward walking ten miles. Another one who was wounded twice in the legs and once in the shoulder, continued attending to his duties for twenty-four hours, until an officer noticed his condition and ordered him to the hospital. The heat was tremendous but the troops

endured it without complaint, and the doctors are astonished at the wonderful vitality of the wounded Turks, who recover with remarkable rapidity. This with good reason is attributed to their abstemious lives.

It has been stated that the Moqui Indians handle the rattlesnake with impunity, and are not inconvenienced by the occasional bite of the animal.

The rational treatment of animal poison is to endeavor to prevent the entry of the virus into the circulation, to neutralize it in the wound before it is absorbed, but when it has entered the system then everything should be done for its elimination.

The most powerful aid to the human system, and the most perfect eliminator known to man is heat. It is used with much advantage and great success by means of water, both internally and externally, but above all is its use by hot air, as in the Turkish bath, which works in harmony with every natural function, promoting the action of all the secretions and more particularly the excretions. By this means will the system unload itself of an accumulation of impurities in an incredibly short space of time, while the heat aids in destroying whatever there may be of virus therein.

Calmette, whom we have previously quoted, has shown that whatever be the source of snake venom, its active principle is destroyed by being submitted to a temperature of about 212 degrees for a variable length of time.

In the not remote future thousands of human beings will owe to the Turkish bath not only an immunity from disease in general, but also an escape from the horrors of a premature death from hydrophobia, the poison of snake bite or the slower action of infectious disease.

The mass of testimony that has been accumulating for over thirty years past is more than sufficient to convince any reasonable mind that is willing to examine the facts.

The medical profession has searched the world over and under for the means of controlling disease, while within the human body itself lies the vital power which needs only to be cultivated and exalted to its true function to banish the mass of disease from the land.

THE THERAPEUTICS OF ALCOHOL IN DISEASE.

Presented in the Section on State Medicine, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1–4, 1897.

BY J. B. GARBER, M.D.

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Ever since the days of Æsculapius, the "Blameless Physician" who went about healing and raising from the dead until finally killed by the thunderbolt of Pluto, the progress of medicine has been a struggle. Its history reads almost like a fable. In those days great temples were built in honor of this Father of medicine, and even snakes were believed to receive healing power from his hand. These endowed serpents were sought after by the Greeks and Romans during epidemics, in the hope of their being able in some way to allay suffering and drive away disease.

On this shaky foundation began the struggle of scientific medication, and in this early beginning we find empiricism to be the key-note of therapeutics. Remedies were used in the treatment of disease that possessed a supposed medicinal power or charm that would in some way bring about a cure. Those who practiced medicine were usually an uneducated class of barbers or quacks, who had more influence from the appearance of their dress than from their learning. The same may be said of the pupil, whose student life was judged more from the number of scars on his body than from his profound knowledge.

Yet in all this ignorance and mysticism we find here and there a bright light who would shine out from among the darkness and shadows around him and bring forth some new medical idea or theory that has stood the test of ages. We shall refer to a few as we pass. Vesalius, who after the publication of his great work on anatomy became physician to Philip II., and whose useful life was cut short by his being shipwrecked on the Island of Zante as he was returning from a trip to Palestine; Paracelsus, who was the greatest military surgeon of the sixteenth century, even though he burned the books of Hippocrates and Galen in contempt. We need but mention such names as Harvey, Paré and Jenner, whose great lifework we celebrated so fittingly at our last meeting. These able men with many others have left "footprints on the sands of time." And among the great constellation of medical stars we find some of lesser light whose brightness has long since faded. Hence we naturally think of Hahnemann, who was born in the year 1755, and after practicing medicine for ten or twelve years without success, began the translation of medical books, and when he came to the subject of Peruvian bark became so mystified that he began taking repeated doses to find out its action on a person in health; and while under its tonic influence his mind became so clouded that he gave to the world his theory of *similia similibus curanter*.

The blazing glory of this unscientific principle has long since faded in European countries, and its American brightness has been waning until at the present time we can find only here and there a disciple who is bold enough to announce on his office sign the title "Homeopathy." It now stands on an equality with "mesmerism," "Thompsonianism," "faith cure," "specific medication," etc.

Thus we see what a struggle scientific medicine has had in the past, and is it any wonder that it has come down to us, at the close of the nineteenth century, laden with errors and extravagant ideas in reference to the therapeutics of many remedies?

We hear it said that surgery has made great progress in the last few decades. The same can be said of therapeutics. Think of the shotgun prescriptions of the past. Who would dare write one today? The old "ten, ten" is written no more. The "thumb-lance" has taken its place among the curiosities of relic collectors.

The striped pole of the barber has lost its original significance. Yet while great changes have taken place in the vast domain of medicine, some therapeutic agents, by the great hold they have had on the popular minds of the laity and some physicians, have held on remarkably well.

The most important of these, and the one that concerns us most in this paper, is alcohol, for in some form it has retained a place in therapeutics ever since the people were advised to "take a little wine for their stomach's sake."

The distillation or production of alcohol originated, no doubt, among the Chinese; but the term came

with other chemic knowledge through the Arabs. And notwithstanding the progress of therapeutics, alcoholic prescriptions have kept pace and by many have held their original importance. It is only during the last few years that its use in the treatment of disease has been checked, and for this, thanks be to the American Medical Temperance Association and other similar organizations, and to such noble investigators and experimenters as Richardson, Davis, Kellogg, Crothers and others, whose sole object is the scientific investigation of the subject.

In this work in the past there has been a great struggle on account of the popular ideas of the laity and the teachings of many of our text-books on therapeutics and practice.

It has been demonstrated beyond any doubt that alcohol interferes with normal digestion. In those experiments made by Drs. Chittenden, Kellogg and others, it is conclusively shown that alcohol in any quantity or form taken into the stomach inhibits or neutralizes the gastric juice. Hence the use of alcohol is contraindicated in the treatment of all forms of stomach ailments, whether acute or chronic.

Now, what is the effect of alcohol on the normal resistance of the human body to disease? It is not necessary to refer to the experiments of Berkely and others, and especially those of Frank H. Hamilton, for every physician who is a general practitioner has had frequent opportunities of observing how readily those who are habitual drinkers succumb to disease.

This fact is well demonstrated in military life, as well as by those who endure great hardships in exploration and navigation; neither can alcoholics stand the extremes of heat and cold as well as the non-alcoholic.

In shock it is of no benefit and adds greatly to the danger. The same is true whether the shock is accidental, surgical, anesthetic or toxic.

Now, lest our paper should be too lengthy, we will hasten to a series of conclusions in regard to the therapeutics of alcohol that we believe are so well established on scientific principles, and as the result of the most scientific investigators of the present day, that they will not be questioned, and if so, then in the light of scientific investigation can easily be defended.

1. Alcohol is an anesthetic instead of a stimulant, and the apparent stimulating effects of its use are delusive.

2. The beneficial effects attributed to its use by alcoholic advocates are due to its paralyzing influence on the nerve centers.

3. Its use greatly interferes with the elimination of urea and other poisonous products, thereby rendering the system more liable to disease.

4. It impairs the co-ordinating powers of the brain and diminishes cerebral activity to such an extent that we have an abnormal action of the nerve centers.

5. It is of no benefit in any of the acute diseases, but greatly complicates the conditions and renders the chances of recovery much less than without it, and to use it in chronic diseases only adds fuel to the fire and substitutes a disease of alcoholism for the one under which the patient is suffering. And if it is of any benefit, it simply keeps up an anesthetic condition of the nerve centers to such an extent that the patient is not conscious of his sufferings.

6. Therefore, we believe that in the scientific light of the closing of this century alcohol should be classed among the anesthetics and poisons, and take its place in therapeutics along beside chloroform, cocain, morphin, chloral, etc., and that our success as physicians will be much better if we abstain entirely from its use in the treatment of disease, and that the beginning of the twentieth century will mark an era in therapeutics.

The shadows of the empiricism of the past shall give way to the light of the scientific medication of the future.

THE TREATMENT OF DIPHTHERIA WITHOUT ALCOHOL, WITH REPORT OF CASES.

Presented to the Section on State Medicine at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

BY SERAPH FRISSELL, M.D.

SPRINGFIELD, MASS.

That diphtheria is an infectious disease, with a specific poison, is universally believed by the medical profession. Whether there are two forms of the disease, the result of different bacteria, is still a mooted question. I believe there are two forms. Just at present, quite as much attention is being given to the treatment as to the nature and cause of the disease. And while the war of words is still raging, and clinical reports both favor and oppose the antitoxin treatment, while judges as well as jurors disagree as to the merits and demerits of this new remedy, I find that whichever line of treatment is followed, the greater part of the medical profession still cling to the belief that alcohol, usually in the form of whisky, is a necessity. Believing that alcoholic stimulants are *not* necessary, but rather are injurious in diphtheria, my purpose in presenting this paper is to call your attention to a line of treatment less dangerous, and attended with better results than when alcohol is used.

Previous to commencing in general practice, I had seen less than half a dozen cases, including an attack I myself had. The first was soon after the disease appeared in the United States in 1856. The case was that of a young lady, a member of a family all suffering from throat trouble, and who had had a similar attack the previous winter. I well remember the white glistening membrane covering the lips and tongue, and its beaded appearance, but I know nothing of the treatment.

The attack from which I suffered was during my college course in 1873. At that time I was with a homeopathic physician who gave me some pink powders. Not satisfied with the results, I applied to a physician of the regular school. He prescribed tinctura ferri chlor., with potassii chlor., also quinia powders and a generous diet. His directions were, "Eat, eat all the beefsteak you can." For the first day swallowing was exceedingly difficult and painful, but I persevered and made a rapid recovery, with no symptoms of heart failure; no whisky or brandy; no alcohol except that in the tincture of iron. The treatment of the three cases which came under my observation while in hospital and dispensary practice was similar to the foregoing, with local applications of glycerin and tannic acid added.

Case 1.—My first case after entering on general practice was that of a young woman student, 16 years of age. Her home at the time was a public boarding house. The disease when first seen was not far enough developed to determine its nature, and as sore throats were prevalent, I prescribed a gargle and

gave quinia powders. I did not see the patient the next day. The third day I was much startled to find the throat and tongue covered with membrane. Three years before, diphtheria had prevailed in the place and many cases proved fatal, one of the leading physicians having lost two children. So alarmed were the people that it was difficult to find any one willing to care for a person sick with the disease. Fortunately for my patient, as well as for myself, two sisters assumed the duties of nurse.

The following were the prescriptions given:

R. Tinct. ferri chlor.	℥ij	8·00
Potass. chlor.	℥j	4·00
Glycerini	℥j	32·00
Aquæ puræ q. s. ad.	℥iv	128·00

Misce, Sig.: Gargle throat every two hours, also take one teaspoonful diluted every four hours.

R. Quiniæ sulph. . . . . gr. xxx.
Ft. chart. No. xx . . . . . .

Sig.: One powder every four hours.

Two and three times a day I made applications of glycerin and ferri persulph. to the throat. The latter I by accident found to give better results than tannic acid. No alcoholic stimulants were given, but the patient took from five to eight goblets of milk and two to four eggs every twenty-four hours.

Dishes and spoons were retained in the room and thoroughly cleansed, and the most scrupulous care was exercised about the sputa. External applications of sliced lemon were made to the throat. Twice alcohol was used as a gargle.

There was great excitement among the boarders when it was known that no form of alcohol was prescribed. The mistress of the house informed me that "all the doctors in town and the best doctors in New York City gave whisky or brandy in diphtheria; that her nephew was then sick with diphtheritic sore throat, and was taking whisky by his physician's order." My reply was: "You tell me all the doctors here give whisky, but their patients do not all recover; I know that one physician buried two children with the disease. No doubt they had plenty of whisky. This being true, if my patients die without whisky, I can not see that the physicians have any reason to criticise me, or my line of treatment."

Previous to this conversation, I had consulted various authors on the treatment of this disease, and found the majority of them favored the use of alcohol in some form; a few did not, and these reported no more fatal cases than the others.

I also found that the authors who recommended whisky, brandy, etc., in diphtheria, recommended the same in other diseases that I had successfully treated without their use. Furthermore, in my own case stimulants had not been prescribed and I had taken nothing of the kind. I had therefore decided not to give alcoholic stimulants in this case. The following day I learned there had been so much said to the sisters who had been caring for my patient, that there was some whisky put in her milk. She detected it and asked whether I ordered it? On being answered "No," she said, "Then I'll not touch a drop," and did not.

My patient made a good recovery. Though a delicate girl, she showed no symptoms of heart failure, did not lose color, and to all appearances had gained in flesh. Her recovery was so rapid, and she looked so well, it was a common remark that "Miss Fannie could not have been very sick." If there was anything further needed to strengthen my belief that whisky was needless in diphtheria, it was the marked contrast between *my patient's* recovery and looks, and the young man who had taken the whisky treatment.

Case 2.—May 20, 1890, I was consulted by the janitor of our building, for sore throat. (From experience gained as a nurse during an epidemic of diphtheria a few years before, he had diagnosed his own case before seeing me.) Examination revealed inflamed fauces and gray patches on tonsils. I prescribed the same medicine as in Case 1, using the gargle every half hour; the iron internally every hour; external applications of salt pork with black pepper to the throat; plenty of beefsteak; room to be disinfected with chlorin gas once in eight hours. My patient, whose room was in the building, decided that with his previous experience, he would care for himself, and promised to take the medicine faithfully as prescribed. This he did, but after twelve hours, I became dissatisfied with results and decided to try the chlorin treatment. I commenced using chlorin water, preparing it myself so as to have it of greater strength than the officinal: Aquæ chlorini ℥iij; glycerini ℥j. This was used as a gargle every half hour. Also one-half to one teaspoonful diluted, every two hours; iron and quinin every four hours alternating. A marked improvement followed. The evening of the third day found the throat apparently clear, and everything indicated a speedy recovery. With the relief of mind which came from this knowledge, the patient retired at ten o'clock and awoke at four in the morning, when he found the membrane again forming. That day, without my advice, he took a cathartic. When I next saw him, he complained of a burning sensation in the esophagus and stomach, with nausea and vomiting. Later the same burning in the bowels. For about thirty hours he was unable to retain food or medicine. Pieces of membrane resembling cooked macaroni were vomited. Various remedies were given to check the vomiting, but nothing proved effectual, until vegetable charcoal was used. From this time the vomiting ceased, and three evacuations of the bowels followed in about fifteen hours. The first two were described as burning like fire; the third more natural.

The symptoms from this time were much more favorable. While vomiting the posterior nares became infected, as did the larynx. The latter was relieved by inhaling chlorin gas, sufficiently strong to produce spasmodic coughing, when the membrane was dislodged and expectorated. I dismissed the case in ten days.

For the first two and a half days, the patient ate nearly three pounds of beefsteak per day. Very little if any food was retained the next two days; after the vomiting ceased, a moderate quantity was taken. Naturally there was some prostration from not taking food for so long a time, as well as from the disease. There was no whisky and no heart failure.

Case 3.—Miss G. consulted me July 4, 1890. She had recently been with a brother and nephew who had diphtheria; both cases fatal. Had dressed the nephew for burial, putting on stockings when the nails were loose. Had taken whisky as a preventive. Sulphur had been used for disinfecting attendants and premises.

Examination showed the throat very much congested, but no membrane visible. The night before she had used kerosene oil for external application to throat and she wished to use the same again. I made no objection. I prescribed the same remedies, disinfectants and food as in Case 2.

July 5. Throat much as the night before. Blisters had formed on the neck, from the kerosene oil. No membrane visible until the third day. Later I found that swabbing the throat spread the disease, and omitted this part of the treatment, but continued gargle and medicine every half hour.

During the second week, pieces of ice were given for a few hours, resulting only in incrasing and thickening the membrane; the same results from a dish of ice-cream.

At this time the membrane covered the tongue and so nearly filled the throat, that there was little space for swallowing. This condition was relieved by local applications of papoid. I also gave papoid, gr. iss to v, every two hours. A local application of mercuric bichlorid (1 to 1000) dissolved the membrane like snow in hot water, but the surface beneath was left in such a sensitive condition, that I did not dare continue its use, fearing spasms from contact of food with the denuded tissue.

The nasal passages to which the disease extended were irrigated with chlorin water by means of an elastic catheter attached to an ordinary hard rubber syringe, with the piston removed. For more than three weeks the treatment was continued every hour or half hour.

During the earlier stage of the disease, notwithstanding my strict orders, the patient was careless about the sputa, and I am confident that later this was the cause of re-infection, since it is the only case in my practice where the disease continually recurred after it was apparently under control.

It was not till the patient was removed to another room, and her bed, bedding and room thoroughly disinfected with chlorin gas and bichlorid solution that

the disease was finally conquered after four weeks sickness. This case was followed by paralysis.

When the agent for the Board of Health disinfected the premises, I am informed that he said he "had noticed where chlorin was used the patient was often paralyzed."

I inquired, "if it was suggested to the man, that possibly where it was not used sometimes there were funerals?"

Cases at Mount Holyoke College, South Hadley, Mass.—In five of the six cases which occurred among the students at Mount Holyoke College, in 1891, at which time I was the physician, I followed the same line of treatment as in the last case reported. In the sixth case, the young lady had chronic catarrh and the nasal passages proved the point of attack.

Laryngeal obstruction developed the third day, and the patient was in danger from suffocation. Chlorin gas cautiously used gave relief. This case proved very stubborn.

On account of the catarrhal condition, the gargle and douche of chlorin water produced irritation, and a solution of mercuric bichlorid was substituted 1 to 100, for the nasal passages and 1 to 62 for the throat. My authority for using this strength, was cases reported by Dr. F. H. Peck of Clinton, N. Y., in the *New York Medical Record*, Jan. 31, 1891.

These applications were made every two hours. A small swab of absorbent cotton with four drops of the solution was used each time for the throat, then burned. An atomizer was used for the nasal passages.

In this case it was twelve days from the inception of the disease until the parts were entirely free from the membrane. Three days later, the patient went to the eastern part of the State (a journey of more than one hunded miles), where she spent one week, when she returned to the college and resumed her school duties.

Not one of the six young ladies showed serious prostration. After the first twelve hours, they were usually ready for their three meals, with two or three lunches. Two of the meals, sometimes all three, consisted of a generous piece of beefsteak or roast beef, with other articles of diet to suit their appetite, while the lunches were usually milk with plenty of cream and eggs. It was one of their pastimes, to make out their bill of fare for the coming meal.

Dr. Edward Hitchcock of Amherst College, Chairman of the Sanitary Department, Dr. G. W. Davis of Holyoke, and Dr. G. G. Hitchcock of South Hadley Falls, saw these cases (but not at any time when the exudate was at its worst), and all three pronounced the disease diphtheria. Prof. Hitchcock said to me: "I presume you give plenty of whisky?" The others made similar remarks. My reply was, "Not one drop; my diphtheria patients have food, not whisky."

Like my first case reported, these young ladies made rapid recoveries. They had so few of the complications usually following the disease, that some of their relatives questioned my diagnosis.

A local paper reported ten cases with one death. Fearing this would be the means of breaking up the school, a report went out from the college, that there neither was, nor had been a case of diphtheria there. The question may naturally arise, why was not the school discontinued? My answer is, because of the source of the infection, and my faith in chlorin gas as a sure disinfectant. Had I found that the disease resulted from defective sanitary conditions, the only thing would have been, to have closed the school; but with the third case, I traced the source to a room, whose occupants had been in communication with relatives whose son had diphtheria.

The following interesting case was the first in which I used the chlorin treatment:

July 9, 1888, I was called at 10 P. M. to see Annie B. aged 6 years. She had had fever for two days. The parents had given aconite, but the child had continually grown worse. Her breath was very offensive, and strongly diphtheritic, and the glands about the throat swollen; tonsils so swollen I could not see beyond. Temperature was 103 degrees; no membrane was visible. I prescribed a solution of tincture ferri chloridi and potass. chlor. with glycerin every four hours, alternating with quiniæ sulph. gr. j. July 10. Patient was much worse; temperature 104.2 degrees; gums and lips cyanotic. Acting on the suggestion of an old practitioner (Dr. M. Calkins, Springfield, Mass.), whom I knew did not favor giving whisky in diphtheria, I put my patient on the following:

R. Aquæ chlorini	℥iij	96.00
Glycerin	℥j	32.00

M. Sig. Gargle throat every half hour, also one-fourth teaspoonful diluted, internally, every hour.

I continued the iron and potassa solution alternating with the quinia, every four hours. The rooms were to be disinfected every eight hours with chlorin gas. All the beefsteak the patient would eat was given. This treatment was continued seventy-two hours. The last eight hours the mother said, "they could hardly rouse the child she was so sleepy, and sometimes she fought like a little tiger." At times she was troubled for breath. While gargling her throat, she asked her mother, what made her keep spitting up skin.

No doubt this was membrane. Her mother gave little thought to the child's question, therefore neglected to save a specimen for examination.

After the fourth day, the temperature gradually fell to 99.5 degrees, then to 99, where it remained for days, and was not normal, when I dismissed the case.

I had read much of sudden deaths from heart failure when everything seemed favorable for recovery.

This was such a serious illness, I cautioned the mother at each visit not to allow the child to exert herself. I was informed it was impossible to keep her quiet. The truth of this statement was soon verified, for within a few days I found my little patient playing horse, with string attached to bedpost, herself astride the foot-board.

During her sickness, her uncle, a physician, saw the case. His thermometer registered 105 degrees. He favored whisky and beef tea. As the case was progressing satisfactorily I could see no necessity for whisky, and so long as the patient was eating a pound of steak a day, there was no need of beef tea.

Later the father informed me that for seven days the child averaged a pound of steak a day. Previous to her sickness she cared very little for meat.

My patient made a rapid recovery, and showed no symptoms of heart failure. During her entire sickness there was no whisky nor alcohol in any form used, excepting in the tincture of iron.

In treating diphtheria cases, two things I consider quite as important as medicine, viz., the disinfectants used and plenty of wholesome food, especially meat. After eight years experience with chlorin as a disinfectant, the favorable results following its use prompts me to say that I believe there is nothing more effectual. I have yet to learn of the first case of infection from any of my diphtheria or scarlet fever patients since using it.

The following proves its superiority to sulphur.

In Case 3, Mrs. E., at whose home my patient was during her sickness, showed no symptoms of the disease for nearly two weeks. Then for three mornings in succession I was aroused at five o'clock to go to her, as she feared diphtheria. During the day, under

treatment, all symptoms would disappear. After the third call, I made particular inquiries and found the woman had been sleeping those three nights in the same room that my patient had for two nights occupied, after coming from the house which had been disinfected with sulphur. I ordered the room and bedding fumigated with chlorin gas. This was done and there was no further complaint from the occupants.

The cases at Mount Holyoke College were reported to the town authorities. In conversation with one of the gentlemen, he referred to the ill success in disinfecting a dwelling house where diphtheria had prevailed. It was almost rebuilt before immunity was secured. Carbolic acid and sulphur were among the disinfectants used. At the college chlorin gas was my only reliance. As soon as I decided that my suspicion as to the nature of the disease was correct, the young ladies were removed to the hospital department and nurses procured. My directions were to use the gas in the patients' rooms every six hours; also use it freely in the hall from which the rooms opened. On making my visits before leaving the hall a fresh supply of gas was prepared and my clothing disinfected.

The rooms occupied by the patients before they were taken to the hospital apartments were disinfected in the same way; also the room where the disease first appeared. After the patients had recovered, the apartments they had occupied with the furnishings were thoroughly disinfected. The mattress and curtains in only one room were burned. There were no more cases of diphtheria although the rooms were used after a week's time.

In regard to food, if diphtheria is first a local disease (usually invading the throat and air passages), I ask what is to hinder stomach and intestinal digestion?

I know from experience that mastication and deglutition is attended with pain. Yet I believe in, and insist on my patients taking nourishing food from the first, if only liquids.

In a few hours the throat seems less sensitive and beefsteak, with other solid food, can be taken by older children and grown people, unless medicines are given which destroy the appetite and interfere with digestion.

By taking food the system is fortified against the disease, the stomach is in a better condition for medicine, the secretory and excretory organs stimulated to perform their natural functions and the diphtheritic poison more rapidly eliminated from the system.

That alcohol will kill diphtheria bacilli I believe, so will chlorin gas. The latter is a disinfectant and germicide; besides, the hydrochloric acid which I use in its preparation, is a normal constituent of the gastric juice, and aids digestion rather than retards it.

Whisky, like any alcoholic stimulant, congests the the mucous membrane of the stomach, retards digestion, destroys the appetite, and paralyzes the nerves.

So many fatal cases are reported where whisky is given, it is my belief that sometimes it is the whisky which causes heart failure rather than the disease.

In closing I will say that, though differing from the general practice of the medical profession, I have never prescribed alcoholic stimulants in diphtheria, and I have never seen reason to regret the course I have taken.

Let us have a Department of Public Health!

CONCEALED ALCOHOL IN DRUGS.

Presented to the Section on State Medicine, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

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The fact is well known that nearly all proprietary drugs contain large quantities of spirits, particularly the bitters and tonics that are advertised so widely Several authorities have made extensive examinations of drugs advertised as temperance drinks and free from alcohol, and in every instance have found spirits from 3 to 50 per cent. of volume, literally ranging all the way from the lighter beers up to the strongest alcoholic drinks in common use. Dr. Bradner has published tables of these drugs compiled from the reports of the Massachusetts Health Board and the examination of State chemists in different parts of the country. His paper appeared in the *Journal of Inebriety* for January, 1890, and the second paper on this subject will be found in the July issue of that journal. These papers bring out the fact, not well known, that nearly all the more prominent proprietary drugs on the market contain large quantities of alcohol.

How far these drugs depend on alcohol to increase their attractiveness and sales is not known, but it is evident that many of the widely used drugs would have no demand if it were not for the alcohol which form the bases of the combination.

The *Medical Press and Circular* and the *Lancet* have called attention to the great danger from the so-called temperance drinks advertised as antidotes for inebriety. An examination of many revealed cocain, opium and alcohol in nearly all of them. Several instances are given of persons who used large quantities of these drugs under the impression that they were cured of the alcoholic crave and were building up against it in the future. In reality they were worse and more incurable than they would have been, using spirits alone.

One case was cited of the death of a man who used large quantities alone of "Seaweed Tonic," which contained 40 per cent. of alcohol. He was under the impression that he was being cured of inebriety, when suddenly delirium tremens came on and he died.

In this country the substitution of ginger compounds for alcoholic drinks are common and always end disastrously, leaving the victim worse and more incurable.

Coca wine preparations are also dangerous, and although I have used them in the first period of withdrawal of alcohol for the treatment of inebriety, it was evident that in many cases they would completely take the place of alcohol and require as much difficulty to remove as the spirits.

The dangerous credulity of professional men in freely endorsing drugs for this or that affection is very common in this country. One of the latest examples of either stupidity or duplicity, is the warm endorsement of a drug by a noted temperance revivalist as a great tonic to be used by all persons who are worn out from alcohol and other causes. Repeated analyses have revealed the fact that this drug contains 21 to 28 per cent. of alcohol, and it is literally stronger than most of the alcoholic drinks in the market. While these facts have been stated many times before, they seem not to have been accepted by the general medical public. The older theories that alcohol is a medicine

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and food, in some unexplained way still continues, and the use of spirits in drugs of all kinds seems not to be thought harmful in any particular way. The gold cures for alcohol and opium contain in many instances these drugs concealed, and while in use completely satisfy all cravings and give the person a false sense of security and restoration. A very important question has been repeatedly raised and answered differently by persons who claim to have some expert knowledge. The question is, can strong tinctures of common drugs be given in all cases with safety; tinctures of the various bitters which contain from 10 to 40 per cent. of alcohol, and are used very freely by neurotic and debilitated persons? It is asserted with the most positive convictions that such tinctures are more sought for the narcotic effect of the alcohol than for the drugs themselves.

In my experience a large number of inebriates who are restored, relapse from the use of these tinctures given for their medicinal effects.

A neurotic who takes bitters or vegetable extracts for any purpose soon turns to wines and then stronger liquors for relief and becomes worse than before. This does not occur in all cases, the effect of the bitters is often repelling, the alcohol causes a headache and they are abandoned.

Alcoholic extracts of any kind used as tonics, diuretics or cathartics are always dangerous and uncertain. The alcohol they contain is, in most cases, very cheap and impure and more dangerous than the spirits used as beverages.

In a recent investigation it was shown that wood spirits were used to make a patent bitters, and the steady increase of the demand for this form of spirits beyond the known requirements of the arts point to its use in drug extracts. There are no evidences of this use, especially in well known drug houses, but the temptation to add to the profits of a drug by using an alcohol on which there is no duty and one with a duty of 90 cents a gallon is very great. Nevertheless, as physicians studying the symptomatology of cases, we are often confronted with a new class of symptoms, where tinctures are given freely and the effects are unexplainable.

In a recent case of influenza where tinct. cinchona was used freely there was mild delirium and irritation, which subsided when the cinchona was stopped. In another case a secret drug was used and the continued stupor and dulness which followed suggested an opiate. An analysis revealed morphia in large doses. It is easy to see how quickly an addiction to such a drug would be created, especially in a neurotic.

I have seen two cases who were suffering from some bronchial irritation, addicted to a secret cough remedy which contained morphia. They suffered, and with great difficulty were made to abstain from the use of the drug.

A very excellent clergyman had certified to a cure of consumption by a certain cough drug, but he could not keep from using it more than a day or two. After two years of continuous use of the drug he became very ill and was treated with morphia by a physician. He recovered but became a morphia inebriate, the beginning of which was the cough medicine at first.

The question is raised, how much alcohol can be used as a solvent in drugs without adding a new force more potent than that which is brought out by the alcohol? Opinions of experts differ. One writer thinks 10 per cent. of alcohol in any drug will, if given any length of time, develop the physiologic effect of alcohol in addition to that of the drug. An English writer says that in some cases a 5 per cent. tincture is dangerous from the alcohol which it contains.

There is some doubt expressed by many authorities as to the potency of a drug which is covered up in a strong tinture. It is clear that the value of a drug is not enhanced, and it is certain that a new force producing or exploding agency has been added to the body.

In experience, any drug which contains alcohol can not be given to persons who have previously used it without rousing up the old desire for drink, or at least producing a degree of irritation and excitement that clearly comes from this source. It is also the experience of persons who are very susceptible to alcohol, that any strong tincture is followed by headache and other symptoms that refer to disturbed nerve centers.

In many studies I have been surprised at the increased action of drugs when given in other forms than the tincture. Gum and powdered opium have far more pronounced narcotic action than the tincture. Yet the tincture is followed by a more rapid narcotism, but of shorter duration and attended with more nerve disturbance at the onset.

I am convinced that a more exact knowledge of the physiologic action of alcohol on the organism will show that its use in drugs as tinctures are dangerous and will be abandoned.

There are many reasons for believing that its use in proprietary drugs will be punished in the future under what is called the poisoned act. It is certainly clear that we are now at the beginning of the study of alcohol and our knowledge of its effects.

THE ETIOLOGY AND THERAPY OF TUBERCULOSIS.

Presented in the Section on State Medicine, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1-4, 1897.

BY H. B. WEAVER, M.D.

ASHEVILLE, N. C.

All intelligent therapeusis must necessarily have as a basis a correct understanding of the etiologic factors that enter into the morbid complexus which it is intended to combat. That there can be no rational treatment of tuberculosis without a correct knowledge of its pathology is evident. On the other hand, it can not be claimed that the histogenesis and progress of the various elements of tubercle are thoroughly understood, although all admit that many facts bearing on it are well determined. One of these facts is, that a vegetable parasite, infective in its nature, is in some way causative. Whether, however, the bacillus tuberculosis of Koch is the fundamental primary cause of this morbid complexus is not so generally acknowledged.

Many eminent pathologists point out the fact that not only the minute tissue changes, which identify the tubercular processes, are virtually one and the same, but that these tissue changes are the result of the same parasite—Koch's bacillus. Even if we grant these facts upon a purely histologic hypothesis, yet there are clinical facts observed over and over by the greatest clinicians of today which might lead to a somewhat different conclusion. They insist, and not without the show of facts, as we believe, "that there is in

the constitution of the individual anterior to the bacillary infection something that determines the fact of the infection and that largely determines also the course and character of the results of infection. We are aware that this doctrine of diathesis or susceptibility is generally admitted by those who hold the current view. We only wish to demur to the idea of the *subordination* of a *primary* etiologic factor to a *secondary* one.

The lamented Flint, among his latest utterances, while admitting the etiologic importance of Koch's bacillus, said in paraphrase of Shakespeare: "You take away their lives when you do take away the means by which they live." Dr. Andrew H. Smith, in the New York Academy of Medicine, recently said in speaking of phthisis, "The fact should be recognized that tubercle bacilli never become implanted in the healthy system. There is always an abnormal anterior condition, and it is that condition that should receive our attention." "By sufficiently improving the nutrition," says Dr. Smith, "you lift the patient above the plane on which the bacillus flourished." Solis Cohen, in his most exhaustive treatise on tuberculosis, forcibly remarks that, "to make our conception of the disease sufficiently comprehensive, we must include other elements than the bacillus and the changes in cellular structure or chemic constitution of solids and fluids brought about by its activity." He continues: "That condition which makes the human tissue a 'receptive soil'—a favorable 'culture medium' for the tubercle bacillus—that condition which of old was called 'diathesis' or susceptibility, is *itself* a disease, a departure from the *norme*, and I believe it to be the most important element in the morbid complexus termed tuberculosis." "It is the element requiring the greatest care in the prophylaxis, the most intelligent and faithful treatment." We believe that this cachexia, this predisposition which may be inherited or acquired, is a defective nutrition, superinduced by a want of vital energy which has its correlate in the histologic expression, in the place of normal tissue elements, of tissue elements of abnormal condition and lowered vitality. We know that tuberculosis is not the product of a truly inflammatory process, neither is it a neoplasm, for it tends neither to "resolution and repair nor to proliferation and persistence. Its tendency is to destruction without subsequent repair." It is a necrosed coagulation without blood vessels and without cell organization, without life—it is death.

Koch's bacillus, then, though still a power, is no longer supreme, according to many pathologists. Though the diffusion of the bacillus has been proven by laboratory research to be almost limitless, that it is in the air we breathe, in our food and drink, yet how few, comparatively, become infected. It is now proven that the respired air of the consumptive may be breathed with impunity. The sputum must be perfectly dessicated before it can become infectious. There is a later school of pathologists who maintain that the bacillus is not even infectious or contagious; that there are other concomitant bacilli more dangerous in their nature, to which "Koch's is simply the cross-sweeper" favoring their entrance; "that in the more pronounced cases of phthisis with the severe symptoms of hectic are the resultants of these concomitant bacilli only," and that the bacillus of Koch is assigned to simply an accidental rôle, appearing in local manifestations merely, which are well defined and eminently curable; that the disease is nothing more than a scrofulosis. How well founded these views are, remains to be seen. Yet it must be admitted that the trend of modern medicine is toward the doctrine of malnutrition as the fundamental, primary factor in the evolution of the phthisic state, and that the intervention of the bacillus of Koch is the secondary factor in the modification of a process already determined. Therefore, we conclude with Cohen, that when in the course of ordinary wear and tear, or "extraordinary wear and tear, or following inflammation or injury, or from any cause or combination of causes degraded tissue elements have been produced, it is highly probable that the tubercle bacilli or other microbes finding therein a favorable soil modify by their activity the further evolution of the disease." Consequently, in summing up the facts, as reflected by both observation and experience relative to the causation of tuberculosis, we think that we are warranted in the following conclusions: 1, that malnutrition is the starting point of all tubercular process; 2, that while the bacillus of Koch is perhaps the most important of the several microbes that influence the progress of the lesion in the various forms of the disease, yet it does not of itself originate the disease in any form; and 3, that both factors, the dyscrasia and the bacillus must exist in combination before there can be tuberculosis.

THERAPY.

Since tuberculosis is a curable disease; since defective nutrition, which may be either congenital or acquired, is the fundamental primary factor, and Koch's bacillus, which is infective in its nature, is the modifying secondary factor in the causation of phthisis, it behooves us to adopt such means and methods as are at once prophylactic and curative in their nature. To attempt to consider the various agencies, either preventive or remedial, in detail, would far transcend the scope of this paper; therefore we shall content ourselves by referring to those of most vital importance. If there is any principle in medicine established so firmly as to exclude debate it is that which makes the highest degree of nutrition the supreme condition of health.

The province and purpose, then, of modern medicine is to restore. And if there is one thing more than another that distinguishes this age of therapy it is the lessening of therapeutic agents by physiologic methods of therapy. It is doubtless true that the vegetable and mineral kingdoms and the realm of applied chemistry have given us countless remedies of value in the antagonism of diseases, but the "grander and deeper researches of biology, the study of the revelations of our cell-life forces operating within the blood, the life stream of the body, has resulted in far more direct and positive agents, restorative and at the same time vitalizing in their natures, reinvigorating the system and enabling nature to offer resistance to the encroachment or ravages of disease." It is also true that nothing has been more indisputably settled by the modern science of biology than that health or vitality is as truly and as practically the antagonist, as it is logically the antithesis, of disease, of every form of disease, of every course of disease. Again, it is one of the most brilliant of all the demonstrations of modern biology that the principle we call health or vitality is not only centered, as was always blindly believed in the blood, but also that perfect blood is an

impregnable citadel, carrying an armament against which the assaults of disease whether by antecedent germs or in consequence of toxins are forever impotent. Here, upon this great truth, it is clear that an infallible hemotherapy might be founded which has been shown to possess the power of, 1, antagonizing specific pathogenic germs; 2, distributing to their ultimate destination nutritive material; 3, stimulating the physiologic functions by normal pathologic influence.

The fact now universally acknowledged by scientists without exception, that millions of pathogenic germs entering into the organism at every breath would go on to immediate destruction of the tissues of the body, is itself an argument *a priori* in favor of the existence in the organism of cellular agents of germicidal resistance to pathogenic germs. This fact was first demonstrated to the world in the discovery of the cellular principle of nuclein, which physiologists found to be the product of the action of the blastema or cell substance of multinuclear leucocytes, or white blood corpuscles on the proteids delivered to the blood from the digestive tract. All peptones are converted into nuclein through their leucocytes. The hitherto mooted physiologic point concerning the assimilability of the peptones is thus explained. Before being cellulized they are foregn bodies and often toxic agents. Therefore nuclein is two-fold in its functions: 1, it has a physiologic function of tissue building; 2, a pathologic function of an antitoxin. In the first all proteids are converted into nuclein by the leucocyte and delivered to the various tissues of the body by the blood. In the second capacity it is the natural enemy of all disease germs. When formed in the blood, as we have said, it is the action upon proteids by the leucocyte. When introduced into the organism it acts in two ways: 1. It immediately excites the osmotic action of each leucocyte, causing it to proliferate or break up into nuclei, which is leucocytosis, the first physiologic step in the resistance of disease, and the fundamental axiom of physiology is, the more active the leucocytosis the greater the vital resistance. 2. It furnishes ready made to the leucocyte material which, under depressed vital conditions, it is unable of itself to construct from the proteids and thus lifts the organism to the physiologic plane, while it so strengthens and increases the leucocyte that it overpowers the toxic germs with which it may come in contact. Every leucocyte if in normal condition is a phagocyte, it has the power of eating up toxic germs and destroying their vitality. Hence this theory of phagocytosis, first advanced by Metchnikoff, has started the profession into the conception of a higher therapy, hemotherapy.

Hemotherapy, blood therapy as the name imports, "is a system of treatment by blood supply, and comprehends also the treatment of the blood fluid itself, its reconstruction and renewal, its cellular alteration and its constituent modification by the introduction of direct biologic agents or substances derived from the blood or tissue, or the introduction into that fluid of chemic and other agents capable of modifying its diseased and altered components, rendering them isomeric and identical with pure and healthy blood." We care not what the agents may be. It may be pure bovine blood or extracts from glandular tissues or the nucleins of Vaughan, or it may be a cultured substance, as those of Koch and Klebs. It must be some substance directed to and introduced into the blood, exerting its known influence therein directly upon the fluid so as to modify for the better, alter and purify, reconstruct and renew that fluid. The fact that some of these biologic or chemic substances other than blood itself are capable of producing these effects brings them under the purview of hemotherapy. The objects aimed at and the effects produced are the same or identical in nature. Hemotherapy seeks to supply blood material, to promote its cellular activity and its germicidal powers. The theory is so palpably clear, so true to the teachings of nature that its wisdom is self-evident.

"Phthisis has its origin in defective tissue-building forces superinduced by privation and depression." It is a popular belief that if food is digested and taken into the circulation that is all that is necessary, but food elements that have undergone thorough transformation in the digestive tract, have been absorbed by the lymphatics and discharged into the blood current, are not yet blood. They are still food and have done the body no good. There are two conditions yet to be fulfilled before this food can benefit the system; a demand on the part of the body for it and nutritive force sufficient to convert such food into tissue. Hence the sheer failure of the food elements, be they ever so well digested and thoroughly nutritive, if they are not appropriated by the body. For this demand, which is dependent on healthful activity both external and internal, and this vital force which resides in the blood cells and is measured by their plenitude and their oxidizing and vitalizing power, are the very things that neither medicine nor diet nor change of air can enabie the exhausted functions to reproduce. Oxidation in the lungs takes place in proportion to the amount of space in which the air comes in contact with the blood. When, as is the case with pulmonary tuberculosis, an extended portion of the lung becomes obstructed or the tissue thickened, so that the oxidizing process is to a degree frustrated, nutrition is likewise frustrated and poisons necessarily accumulate in the blood. Under these circumstances when the blood is already surcharged with débris which it handles with difficulty, food crowded into the circulation only aggravates the condition instead of relieving it. Every day the tubercular infection eats away more of the lung tissue and shuts off more of the breath of life from the languishing and non-proliferating blood cells, which thus daily appropriate less nutriment and transform it into less and less of living tissue in every part, organ and nerve of the system, a process which is well called consumption, for the victim is rapidly consumed by starvation; "not for want of food (with which he can do nothing), but for want of breath, for want of lungs. There is no help in him and no human art or power can engender help within him; it must be put in him. Is there nothing that can be done to stanch this flux of life blood?" It is here that hemotherapy comes to the rescue and supplies the great desideratum with her conserved nuclein, in the form of pure bullock's blood or in animal or vegetable nucleins, which may be transfused or introduced through any part of the alimentary tract, which will do the whole work of healthy blood, ready oxidized in spite of inadequate breath; ready vitalized and cell-abundant in spite of exhausted vital energy.

The only practical question remaining is: Can these principles be extracted and preserved in their physiologic environments for therapeutic use? The

very scientific researches and trustworthy experiments of Vaughan, Alude, Breckenridge and their colaborers would seem to answer this very conclusively in the affirmative; while the testimony of such distinguished clinicians as Biggs, Conant, Baxter, Bliss, Mays, Waugh, Wathen and a host of others can be taken only in the light of a demonstration of the proposition that in hemotherapy we have the corroboration of Metchnikoff's experiments that it is the principle of leucocytosis, hence phagocytosis, the most valuable method in the modern pharmacopeia. And as phagocytosis is declared to be the basis of resistence of the body to micro-organized disease and that the blood serum has germicidal constituents and that this quality is found in the neuclin, it is reasonable to suppose that hemotherapy or neuclein therapy is a rational procedure in the treatment of tuberculosis.

There is a difference between immunity and cure. Immunity we conceive to be a condition brought about by the introduction into the organism of a modified virus or an antitoxin which so stimulates certain cells that they produce an antidote to the poison. In diphtheria the antitoxin introduced into the body of the child may so stimulate the spleen that it manufactures nucleins in such abundance that they in their phagocytic functions are enabled to swallow up or in some way neutralize the toxins of the micrococci in the throat.

"In tuberculosis nature has attempted to immunize every tubercular subject and has utterly failed. Some step in the process has failed." The process of leucocytosis has been interrupted by want of vital energy or defective nutrition. The leucocytes are no longer phagocytes. "The bacterial poison has been introduced into the body in a form too virulent to be resisted or the cells of the body have been unable, devitalized as they are, to act with normal energy." Hence, if nature with all her resources within the body is unable to combat the disease, then where shall we look for curative substances in infectious diseases? Not to and within the body itself. We must look to some extraneous source. Either we must introduce some germicide formed by other cells outside of the body or employ other agencies for the purpose of stimulating the nuclein-forming cells. Hemotherapy offers us the means which we can utilize, either the bullock's blood or the animal extracts which contain the germicidal essence—the nuclein. We see then that the only germicide from which we can expect any good results must be of cellular origin. We know that the experience of the medical profession for the last twenty years has demonstrated the fact that no known chemic remedy can be introduced into the living organism with sufficient strength to act as a germicide without doing serious harm to the tissues with which it comes in contact. Almost every day we hear of some new discovery of a germicide for tuberculosis, but experience has invariably shown in every case that it was poisonous or not germicidal at all. Hence pet nostrums of various combinations of creosote, terebene, eucalyptus, menthol and the like have been used with all manner of mechanical devices, by the ardent advocates of this local process, without any permanent effect on the tubercular process. The researches of Behring demonstrate that antiseptics, when injected under the skin, reach a fatal dose when one-sixth of the amount which is necessary to prevent the development of the anthrax bacillus, is used. Solis Cohen, speaking of the local use of these substances, remarks: "Those that have been urged or revived since Koch's discovery are principally germicidal agents and are directed against the bacillus. Recalling the location of lesions containing bacillus, anyone at all familiar with the penetrating power of sprays and vapors, under the usual physical conditions, will know how fallacious is this notion." With the possible exception of turpentine (as a type of its group) they have not seemed to me to have the slightest influence over tubercular processes." Now, in the language of Victor Vaughan, "that we have learned that the animal body itself germinates a germicide more powerful than corrosive sublimate, and since we know how to increase the amount of this substance in the blood and can isolate it and inject it into other animals, renewed hope comes to us." In the pure blood or nuclein treatment we have hope of accomplishing the destruction of the specific germs of tuberculosis within the living organism or immunity from their toxic products. If infection occur in healthy persons, their tissues and especially the blood are capable of offering successful resistance and the organism is preserved in its integrity. But in the established disease the resisting power of the patient has been insufficient, either by reason of the organism having been overpowered by excessive quantity of infecting material or by minor resistence on the part of the tissue where the germ gained entrance. It is, therefore, most rational to seek the regeneration of the blood. In addition to dietetic and hygienic management, we look to hemotherapy to bring this great boon to man.

I am under obligations to Drs. Osler, Cohen, Vaughan, Andrews, Biggs, Summers, and others, from whose works I have freely drawn.

A REPORT OF THREE CASES OF TETANUS. ONE TREATED SYMPTOMATICALLY AND TWO WITH TETANUS ANTITOXINS.

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Case 1.—Thomas McG., Canadian, laborer, aged 26. Patient walked into St. Luke's Hospital Oct. 25, 1895, with the following history: Eight days previously he had received a punctured wound of the foot from a nail. The wound bled slightly and he had at once gone to St. Luke's Dispensary for treatment. Here the wound had been freely incised and washed with a strong bichlorid solution and wet bichlorid dressing applied. He had returned each day to have the dressing renewed. The evening before his appearance at the hospital he had noticed some difficulty in chewing and swallowing, and this had brought him to the hospital early the next morning with the remark that he thought he was going to have lockjaw. Examination showed marked trismus, the masseters being tense and hard and the patient unable to open his jaws more than a half-inch, and attempts to separate them forcibly caused pain. His speech was indistinct. An attempt to swallow some water that was given him caused spasm of the pharyngeal muscles and part of the water was regurgitated. The patient complained of lameness in the back of his neck and could not flex his chin on the sternum. Forcible attempts to do so caused pain. Examination of the wound showed an incision about one inch long and half an inch deep in the ball of the foot, dry and clean and with no signs of inflammation. The patient was at once assigned to the surgical ward, the wound enlarged and irrigated with 1 to 2000 bichlorid solution and a bichlorid dressing applied. Chloral, grs. xv, and sodium bromid, grs. xxx, were ordered given every three hours. Attempts to secure some tetanus antitoxins were made at the Health Department and

the various laboratories in the city but none could be found. The patient continued about the same during the day except the pain in the face and neck became more severe and began to extend down the back, and deglutition was a little more difficult. Extract of calabar bean was ordered later in doses of a half grain every two hours. Just twenty-four hours after admission the first general convulsion occurred, and they continued to recur at short intervals with increasing severity, involving the neck, thorax, back and abdomen and required chloroform anesthesia. Later the extremities became involved and the patient was in a position of opisthotonos almost constantly when not under chloroform. Finally the diaphragm became involved; sufficient chloroform could not be administered even by artificial respiration to secure relaxation, and the patient died from asphyxiation thirty hours after admission. Cyanosis was intense. The temperature during the entire time ranged from 97.8 to 98·6 degrees. The patient retained consciousness up to two hours before death. An autopsy could not be secured.

Case 2.—J. A., American, cook, age 19, brought to St. Luke's Hospital Oct. 27, 1895. He had fallen between two cable cars in such a position that the guard surrounding the car struck him in the head, pushing him along on the track for some distance. He presented the following injuries: 1. An extensive laceration of the scalp in the left parietal region with a large oval flap 10 cm. in diameter torn up and turned back; the periosteum scraped from a large part of the exposed bone and hanging in shreds. 2. A small laceration at the outer angle of the left orbit, and several abrasions about the face. All the wounds were very dirty but the scalp wound especially was full of the dirt of the street, ground in with such force that the pores of the denuded bone were filled. No fracture was demonstrable and there were no symptoms of intracranial pressure. Patient was conscious and able to talk intelligently.

He was anesthetized, the entire head shaved and the wounds cleaned as thoroughly as possible under constant irrigation. Portions of the scalp, where the dirt was so ground in that they could not be cleaned were excised, as were the torn shreds of periosteum, and the dirt picked or scraped out of the bone. Ample drainage was supplied with gauze and twisted silkworm gut, antiseptic gauze being carried into all the crevices between the edges of the wound and the skull. The flap was then replaced and held in position with a few loose sutures of silkworm gut, no attempt being made at accurate approximation as the tension required would interfere with the drainage. The laceration at angle of orbit and abrasions about the face were next carefully cleaned and the whole side of the head enveloped in a wet antiseptic dressing. Antiseptic irrigation was kept up daily and the patient made good progress, being up and about the ward with no temperature on the sixth day. During the second, third and fourth days the highest temperature was 101.8, 101.2 and 100.4 degrees respectively, coming down to normal on the fifth day. On the seventh day after the injury it was noticed that the patient apparently had a left-sided facial paralysis, as the lines about the cheek and angle of the eye were effaced and the corner of the mouth seemed to droop a little. Upon being questioned the patient said he felt first-rate. The next day, the eighth, the patient complained of pain in the back of the neck and difficulty in eating. Tetanus was suspected and sedatives prescribed. Chloral, grs. xv, sodium bromid, grs. xl every two hours. On the ninth day marked trismus developed, also a slight delirium; temperature 98.2 degrees axilla, and difficulty in swallowing persisted. Positive diagnosis of tetanus made. Tenth day pain in the neck and back very severe, trismus not so marked, difficulty in deglutition increased, although still able to take liquid nourishment. Eleventh and twelfth days, all symptoms intensified, especially the trismus and difficulty in deglutition. Extract of calabar bean in doses of 1 gr. exhibited every two hours. As we had been unable to procure any antitoxins for the first case no attempt was made at this time, but on the twelfth day we accidentally learned from Dr. Evans of the Columbus Laboratory, that a representative of the Institut Pasteur of Paris was in the city and had the antitoxins with him. As the patient's condition was certainly becoming worse, notwithstanding the slow progress of the symptoms, it was determined to try the antitoxins in this case. Thirty c.c. were secured the next day, November 8, and injected in doses of 15 c.c. six hours apart. Immediately following the injection the temperature, which had been normal since the fourth day following the injury, rose to 103.2 degrees, coming down to 100 degrees in six hours. November 8 the patient said he felt better but the pain and spasms in the back of the neck continued and he still had great difficulty in swallowing. This interference with deglutition had so far been the most distressing symptom, though he could manage quite well by taking liquids very slowly, but his hunger and thirst were so great he could with difficulty be controlled. Attempts were made to increase the nourishment and at the same time decrease the feedings by mouth by giving nourishing enemata, but he resisted so strongly that it would have required forcible restraint and on account of the irritation and excitement it was not thought best to resort to such measure. All this time the patient would get out of bed and sit in a chair or go to the lavatory or help himself to a drink whenever he was not watched by the attendant.

November 9, 30 c.c. of antitoxin was administered, the temperature promptly rising to 103.2 degrees and persisting for ten hours, then falling to 99.4 degrees. The patient's condition continued about the same until the next day, when general tonic spasms developed, requiring chloroform anesthesia to control them. During this time the chloral and bromids had been kept up, with one grain doses of extract of calabar bean every two hours. Later in the day delirium and incontinence of urine developed. November 10, another 30 c.c. injected under anesthesia. Temperature rose to 101.4 degrees, falling to 99.4 degrees in eight hours. All medicine and nourishment by mouth had been stopped, as every attempt to swallow produced intense spasms about the mouth and throat, and nourishing enemas containing the sedatives were given when the patient was under an anesthetic. Following each injection of antitoxin there was a noticeable decrease in the frequency of spasms for a period of from twelve to sixteen hours, and during that time the patient rested quietly. The relation of pulse and temperature to the injections is best shown by the accompanying

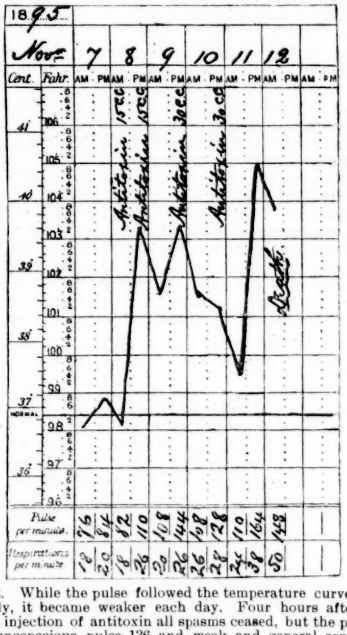

chart. While the pulse followed the temperature curve very closely, it became weaker each day. Four hours after the third injection of antitoxin all spasms ceased, but the patient was unconscious, pulse 136 and weak and general condition bad. Nourishment and stimulants were pushed by enemas and hypodermic injections, but without effect. November 11, twenty four hours after all tetanic spasms had ceased and thirty hours after last injection of antitoxin, the temperature suddenly rose to 105.2 degrees, pulse 164, and the patient became comatose and died six hours later. The autopsy revealed no fracture or hemorrhage that could have caused pressure, and no evidence of meningitis either basilar or cortical, which had been suggested and which might have complicated the diagnosis. Microscopic and bacteriologic examinations were not made.

Case 3.—C. E., railroad switchman, injured Nov. 26,

1896, while coupling cars. Compound fracture left index finger with deep laceration of palmar surface. Also deep laceration of middle finger extending back into the palm. Avulsion of nail and soft part of end of finger nearly crushed off. The hand was thoroughly scrubbed with hot water, soap and brush; foreign bodies, dirt, etc., removed and wounds scrubbed with 1 to 2000 bichlorid solution. The lacerations were sutured, fracture splinted and hand dressed with dry boric acid dressings. The case apparently made good progress until the morning of December 3, when symptoms of tetanus developed with pain in back of the neck and trismus. Did not report to surgeon in attendance, however, until late in the evening. Bromids and chloral given during the night and sent to St. Luke's Hospital December 4, at 9 A.M. At this time the trismus was marked, pain in the neck and back very severe, with some muscular rigidity and beginning convulsions. At 12 M., 10 c.c. of antitoxin injected; at 12:30 P.M., general convulsions and opisthotonos; temperature 100 degrees, pulse 118, respiration 20; 5 P.M., 20 c.c. antitoxin injected; 8:30 P.M., temperature 101.2 degrees; pulse 110; 10:30 P.M., temperature 102.2 degrees, pulse 130, respiration 30; 1 A.M. (December 5), pulse 150; 3 A.M., temperature 102.6 degrees, pulse 128, respiration 40; 3 A.M., temperature 103 degrees; 4 A.M., temperature 105 degrees, pulse 168, respiration 28; 4:20 A.M., dead. From the time of the first injection of antitoxin the convulsions progressively increased in severity, occurring regularly at intervals of about twenty minutes. Sodium bromid, grs. xxx, and chloral, grs. xv, were given per rectum every three hours and inhalations of chloroform frequently, to control the convulsions. The antitoxin injections apparently exerted no influence upon the tetanic symptoms and the circulation weakened rapidly.

In reviewing the published reports of cases of tetanus that have been treated with antitoxic serum, one is at once impressed with two facts: 1, that the mortality rate has been but little influenced by the treatment; and 2, that the relation of the period of incubation to the mortality is practically the same as in cases where serum therapy was not used. In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for July, 1896, Kneass makes the mortality of tetanus as heretofore treated about 47 per cent., a result obtained by averaging reports from numerous sources and observers. The same author analyzes a series of sixty-one cases treated with tetanus antitoxin with a mortality of 41 per cent. As regards the influence of the treatment with relation to the incubation period in this same series, he shows the following results:

Period of Incubation.	Deaths.	Recoveries.	Mortality, Per cent.
One to five days.	7	1(?)	87.5
Six to fourteen days. . .	16	25	38
Fifteen days or over. . .	2(?)	10	16.66

He says, as a result of his deductions: "It seems to me that those cases in which the symptoms appear before the sixth day die in spite of any antitoxic treatment, and that those in which the development is delayed beyond the second week would recover without any such treatment." This is almost precisely the opinion that has obtained for the last century regarding the symptomatic treatment of tetanus. In each of the three cases reported above the period of incubation was seven days. The two that were treated with antitoxic serum showed very different results, corresponding closely to the acuteness of the development of the symptoms. In the cephalic case the symptoms developed more slowly and with less intensity and the antitoxin injections seemed to influence the tetanic convulsions for a short time, while they ceased entirely after 90 c.c. had been exhibited, but the circulation gave out either from the effect of toxins or antitoxins. Trevelyan[1] reports a case of head tetanus treated with antitoxins, in which the incubation period was twelve days and the clinical course corresponded very closely to the one reported above, including the reduction of spasms and death from heart failure. Several other cases have been reported, among them those of Mason,[2] Farrant,[3] MacEwan,[4] in which the antitoxin seemed to lessen the frequency or intensity of the convulsive seizures, but the patient died from circulatory depression. Considering that the so-called head tetanus, or tetanus following head injuries, is almost universally described as running a slower and more favorable course than tetanus following wounds of the hands and feet, it would seem that such cases offer the best hope of improvement under antitoxin treatment; yet in the two cases referred to above the results were no better than what might have reasonably been expected from the usual symptomatic treatment, possibly not as good. Some observers report a sudden decrease in the urinary secretion following the exhibition of antitoxin, in some cases amounting to complete suppression. This was very marked in our second case, the amount falling from 30 ounces to less than 12 ounces within the twenty-four hours following the first injection. We have analyzed twenty-six cases that have been reported as having been treated with antitoxic serum within the past two years with the following results: Recoveries twelve, deaths fourteen; total mortality 53.8 per cent. Of those that recovered, the shortest period of incubation was six days; of those that died, the longest period was twelve days. Of twenty-one cases with incubation periods of seven to fourteen days eleven died, or 52.4 per cent. The period that elapsed from the onset of symptoms till treatment with antitoxins was begun, varied in the twenty-six cases from twelve hours to fifteen days and seems to have had little influence upon the result. In seven of the fatal cases antitoxin was administered before the third day, in four of these as early as twenty-four hours. In six of the cases of recovery it was not administered until the seventh day or later, in three later than the thirteenth day. In only four of the above series of twenty-six cases was antitoxin used alone; in the others chloral, bromid, morphia, physostigmin or chloroform were used as well. In comparison with this the series of nine cases reported by Archinard[5] of New Orleans is so unique as to be of interest, particularly as regards the following points: 1. He reports nine *consecutive* cases with two deaths, or *22.2 per cent.;* 2, in the two fatal case the incubation period was *eleven and twelve days*, while in three of the seven successful cases it was *five days or less;* 3, in the seven cases that recovered three received only one injection each of 20 c.c., three had two injections, or 40 c.c., and one was given 60 c.c.; 4, no ill effects were observed from the treatment except a slight rash in a few cases and a little pain at the point of injection. The Institut Pasteur advises the exhibition of much larger doses, 100 c.c. to 200 c.c. after the development of symptoms, and also says that while it is of undoubted value in preventing attacks, both in man and animals, it is of doubtful value after symptoms of tetanus have appeared. Experimentally it has been demonstrated that from 1–400 to 1–100 of the body-weight, 600 c.c. to 150 c.c. for a man, must be used to prevent development of symptoms after inoculation. Doubtless to be of value after the disease has developed even larger doses than that would be necessary. The value of antitetanic serum as a prophylaxis in animals has been proved beyond a doubt by the experiments carried on by veterinarians in France and elsewhere, and following the deductions from the clinical and laboratory observations to

date we must conclude that in the treatment of tetanus in man its chief value is doubtless as a prophylactic rather than a therapeutic measure. We believe it deserves a more general use along that line in cases of injury where the wounds are of such a nature that tetanus is to be feared.

In this connection it is of interest to refer to the experience of the Medical Bureau of the World's Columbian Exposition, as illustrating the value of thorough aseptic and antiseptic wound treatment as a prophylaxis of tetanic infection. Dr. Plummer has reported[6] a series of 203 punctured wounds of the foot treated by the Medical Bureau during the construction period of the Exposition *without the development of a single case of tetanus.* Of the 203 cases 202 were nail punctures made, says the author, "in a vast majority of cases by a rusty nail." As to the treatment carried out in these cases the same writer says:

"Although our treatment varied much in different cases, the routine treatment finally agreed upon as being applicable to most cases and followed by the best results, was as follows: 1. Thorough cleansing of the foot with solution of bichlorid of mercury 1-1,000. 2. Trimming the edges of the wound. 3. Swabbing out the wound with a probe lightly covered with cotton and dipped in 95 per cent. solution of carbolic acid. 4. Drainage. 5. Antiseptic dressing. 6. Rest. In the sole of the foot, where the epidermis is very thick, the edges of the wound frequently come together with valve-like accuracy, effectually preventing the escape of anything from the wound, so that, in some cases, it was only after trimming away the edges that the presence of a foreign body was discovered. This procedure also favors drainage. The use of the probe in cleansing these wounds is preferable to syringing, for two reasons: First, it is easy to reach the bottom of the wound with the probe, while it is doubtful in many cases whether this could be done with a solution applied by a syringe; secondly, a small particle of foreign material will often adhere to the cotton and thus be removed."

In several of the cases domestic treatment with various poultices had been tried and followed by cellulitis before the patient presented himself at the Medical Bureau.

Such results certainly justify us in saying that an ounce of clean surgery is worth several pounds of serum therapy in the treatment of tetanus at the present status of our knowledge.

[1] British Medical Journal, vol. i, 1886, p. 32.
[2] Lancet, 1895, ii, 829.
[3] Lancet, 1895, ii, 1432.
[4] Lancet, 1896, ii, 381.
[5] New Orleans Medical and Surgical Journal, vol. xlix, p. 385.
[6] Chicago Medical Recorder, June 1893.

THE PHYSIOLOGY AND THERAPEUTICS OF THE THYROID GLAND AND ITS CONGENERS.

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(*Concluded from page 960.*)

Exophthalmic goiter.—In this serious disease we have to consider a condition very different from those previously described, in that they are due to an increased functional activity of the gland. The view that a hyperthyreosis is the underlying cause, is based on several facts, as follows: The symptoms are almost identical with those observed after administration of overdoses of thyroid extract, viz., tachycardia, tremor, headache, prostration and sweating; and a certain degree of exophthalmos has sometimes been observed during thyroid treatment. Exophthalmic goiter has been known to follow an overdose of the extract. The structure of the gland in this disease is almost exactly reproduced in glands stimulated to the highest degree of activity. Halsted, by removing large portions of the thyroid from dogs, has produced a compensatory hypertrophy in the remaining stumps, and he describes the changes as consisting of a branching of the acini with foldings in their walls, so that they consist of alternate recesses and promontories, while at the same time a vacuolation and disappearance of the colloid material occurs and the epithelial cells are changed from low, cuboidal forms to tall, columnar cells which in many places reach entirely across the lumen of the acini and meet in the center. These changes are exactly duplicated by the gland in Basedow's disease. And further, if this condition is due to a hyperthyreosis we would expect the administration of thyroid extract to aggravate the symptoms, and this is exactly what does occur. Thyroid preparations have been tried in hundreds of cases by reliable observers, and the great majority of them agree that the patient becomes much worse under this treatment, and is relieved on its cessation.

The writer has analyzed the thyroid in one case of exophthalmic goiter in which the gland weighed 17 grams, containing in each gram 0.3 mg. of iodin, a total amount of 5.1 mg. This small proportion is readily explained by the microscope, for, as stated above, the colloid probably vacuolates and disappears as rapidly as formed, so that none is stored up in the acini. We must therefore conclude that the symptoms are due to a rapid production of colloid by the hyperactive epithelium, the product apparently being more fluid than normal, and discharging at once into the system by the lymphatics.

With all these facts to oppose them the theories of a purely nervous origin of exophthalmic goiter in the cervical ganglia or the restiform bodies have lost much of their support, although some authorities still uphold them, and a few surgeons have reported good results following the removal of the cervical sympathetic ganglia. Whatever the cause of Basedow's disease may be, it is pre-eminently the condition in which thyroid therapy is contra-indicated.

These four diseases above mentioned include all those due to evident changes in the thyroid itself, and are naturally the conditions in which this form of treatment was first suggested. Were they the only conditions in which it is of use the thyroid extract would have little market in this country, where goiter, cretinism and myxedema are so rare; but there have been a great number of other uses to which it has been applied, and its success in one of them would seem to be sufficient to place it in the hands of every physician; that disease is obesity.

Obesity.—During the treatment of the diseases above described it was generally noticed that the patient, especially if stout, began to lose weight, and this while gaining in strength and vigor. In fact loss of weight is one of the most prominent symptoms observed in cretins when first put upon thyroid treatment. These observations suggested the experiment of exhibiting thyroid preparations to patients with

troublesome obesity, and the most happy results were obtained. Even without change of diet there is a marked loss of weight at first, frequently one pound a day for three weeks or so, and when combined with the usual dieting methods a most pleasing reduction in weight is obtained. This loss of weight is also produced without injury to the body, or loss of strength and health. The fat is removed as carbon dioxid and water, while there is comparatively little loss of the nitrogen, containing tissues, making it an ideal remedy. The reliability of the method is shown by a series of 145 cases, collected by Cabot, in all but six of which there was some improvement. The improvement is not permanent, except in a few cases, but if the patient adhere to a system of dietetics and exercise, such as is ordinarily used, the ground gained by the thyroid extract is held. In all probability the benefits of this treatment are due to the increased metabolism in the tissues, producing the same results as vigorous and general exercise, *i. e.*, a burning up of the superfluous carbonaceous materials in the body. It can not be stated positively that obesity is or is not due to any diminution in the activity of the thyroid from lack of investigation on this point, but it has often been noticed that the thyroid glands of obese people are smaller than normal, red and soft. Study of the structure and iodin content of such cases may throw some light on the question.

Nervous diseases.—Because of the awakening of the intellect of the cretin, the removal of the apathetic condition of the myxedematous patient, and the nervous symptoms observed similarly in over dosing with the thyroid extract and in exophthalmic goiter, the thyroid treatment has been tried in conditions referable to both the peripheral and central nervous systems.

In insanity the results seem to be variable. Bruce tried the treatment in the Royal Edinburgh Asylum in cases not amenable to ordinary methods, and obtained many gratifying results in patients threatening to pass into confirmed dementia, or who had been stuporous for long periods. He considers it of value as a cerebral stimulant where the higher cortical cells are anergic after acute attacks of acute insanity. On the other hand the majority of observers report no improvement whatever in the mental conditions, and consider it dangerous in acute mania and melancholia. A more extended trial along these lines is needed before the thyroid therapy can be absolutely condemned, for it seems very reasonable that its effects on metabolism may in some cases improve the condition of the higher cerebral centers.

The writer has had occasion to examine, chemically, the thyroid from a case in which mental development was arrested, in a female, at about two years of age. The patient lost every particle of reason, and had been fed and cared for by attendants until she died at the age of 23 years. She had frequent convulsions during all this time. The thyroid was rather large, nearly encircling the trachea, and weighed when dry 11.62 grams. Each gram contained but 0.532 mg. of iodin, the total amount being 6.16 mg. While the total amount is small, and the proportion very low, yet an isolated case like this can not be considered an indication of the usual condition.

Since tetany has been observed to follow thyroidectomy, both in man and animals, the use of the gland in cases of the idiopathic disease is rational, and the clinical results seem to justify it, Levy-Dorn, Gottstein, Bramwell and others have reported very favorable results, some of the cases having been of long standing.

Chorea has been treated with some success by the thyroid extract. Wolfstein reports a case with excellent result, in which the use of the thyroid was based upon its effect on metabolism, its use in tetany, and its diuretic action.

Lepin has reported two cases of progressive myopathy, in which, after electricity the usual treatment were found unavailing, the thyroid gland was given with the result that in a short time muscular vigor was greatly increased without change in their size.

Stieglitz, in a case of hemiatrophy of the face with clonic convulsions of the temporal and masseter muscles, produced a marked improvement by administration of thyroid extract, but the relief was only temporary.

Skin diseases.—The use of the thyroid in this class of cases was suggested by the effects on the skin in myxedema. It has been tried most in psoriasis, with varying results. Of 154 cases collected by Cabot sixty-three were reported as improved, fifty-three as unimproved and twenty-two as worse. Some of the cures, however, were in very obstinate cases. Similar results are reported in eczema, acne rosacea, ichthyosis and xeroderma. Therefore it would hardly seem that the thyroid therapy was to be applied promiscuously, at least, in dermatologic affections.

Scleroderma, however, seems to offer a more favorable field. Grünfeld and Stieglitz have each reported cases in which a permanent improvement was produced by this treatment, and the writer has had the opportunity to study, postmortem, a case of the diffuse form of this disease in a woman, 51 years of age, in whom the disease had existed for about one year. The thyroid gland was found to be atrophic, weighing but 14 grams when fresh. Microscopically it was found to consist of groups of acini, collected into lobules, and in the lumen of which there was little or no material. In occasional areas, on the other hand, a few vesicles had become filled with colloid until their walls had ruptured and large cysts formed. There was a general increase in the connective tissue, and the vessels of the gland had undergone a proliferation of the intima and calcification. The dry gland weighed only 3.23 grams, and in each gram there was but 0.91 mg. of iodin, so that the total amount reached 2.94 mg. but little more than one-fourth of the normal quantity. In addition to this the hypophysis was hypertrophied, weighing 0.7 gram, and microscopically it was found that many of the alveoli were dilated by a colloid secretion and in their walls were an unusual number of eosinophile cells. If these changes are constant in scleroderma they point strongly to a thyroid origin for the disease.

In lupus, Bramwell and Abraham have had favorable results, obtaining an improvement in all of their cases, but no cures.

Miscellaneous.—Morin first tried thyroid extract in pulmonary tuberculosis, basing the treatment on the fact that in phthisis the thyroid is usually atrophied, that in goitrous districts the people with enlarged thyroids rarely acquire tuberculosis, and that phthisis has been observed to improve after the patient acquired goiter. The results in phthisis have indicated a general temporary improvement, such as generally follows any new form of treatment in this disease. If there is any specific action of thyroiodin on tuberculosis, it

seems difficult to account for the not infrequent occurrence of tubercular areas in the thyroid gland.

In syphilis this treatment has also been tried, and its reported success in two cases of a very malignant form, acquired in India by British soldiers, created considerable interest. Since the active principle is an iodin compound, the application to syphilis seems reasonable. But it seems very strange that when iodin is a specific in syphilis we should have gumma develop in the thyroid gland which contains so much of this element, yet this sometimes happens.

Because of its effects on cretins, and its influence on metabolism, the thyroid extract has been used in many cases of stunted growth in children, and in nearly all the cases increase in height has followed. In the same way it has been administered in rickets with some reports of improvement.

It has also been used and reported as efficient in removing scars, deformed finger nails, keloids, fibroids, including myo-fibroma of the uterus. In fact, to enumerate all the conditions to which it has been applied, with at least imagined success, would almost be to give the entire list of known pathologic conditions.

Summary.—Put in compact form, the sum total of our knowledge of the thyroid gland amounts to the following, according to the results of the latest investigations:

The thyroid gland is an organ of very variable size and shape, reaching its highest degree of development at about adult life, and decreasing with old age.

It is capable of great hypertrophy, but probably is not capable of more than a slight degree of regeneration.

Its secretion is a colloid material, which is discharged into the general blood current by way of the lymphatics.

The colloid material contains the active material of the gland, which is a complex but very stable body, called "thyroiodin," which contains about 10 per cent. of iodin.

This substance either acts as an antitoxin to the products causing auto-intoxication, or furnishes some substance necessary to tissue metabolism.

Thyroiodin is necessary to the animal economy, absence of it in adults producing myxedema; in the new-born, cretinism.

The amount of iodin in the thyroid glands of the inhabitants of any given district varies inversely with the prevalence of goiter in that district.

Thyroid glands of residents of Chicago contain fully four times as much iodin as do glands in the goitrous districts of Germany

It is probable that glands from the Atlantic coast contain about the same amount of iodin as do the Chicago glands.

Simple parenchymatous goiters contain about the same total amount of iodin as normal glands, but the proportional amount is much smaller. Probably colloid goiters contain the same proportional amount, with a very much higher total.

The amount of iodin in the glands of children, from a mere trace at birth, steadily increase until adult years. It then decreases, and in old people again becomes very small.

Therapeutically the thyroid extract is a specific in cretinism and myxedema.

In simple goiter and in obesity the majority of cases are improved or cured.

It seems to have some value in tetany, scleroderma and arrested growth.

The value in psoriasis and other skin diseases, tuberculosis, insanity, rickets, etc., is doubtful.

It is contra-indicated in exopthalmic goiter, heart lesions, albuminuria and glycosuria. The dose should never be so large as to produce symptoms.

THE THYMUS AND HYPOPHYSIS.

In a study of the thyroid gland one's attention is necessarily called to two other organs in very close relation, both by the manner of development and the general obscurity which surrounds their function. They are the thymus gland, and the hypophysis or pituitary body.

The Thymus.—This gland is developed from the entire third visceral cleft and from a part of the fourth cleft, the remainder of which goes to form the lateral lobes of the thyroid. This common origin explains the frequence of thymus rests in the substance of the thyroid gland. From the terminal end of the cleft is formed a tube lined with epithelium, which grows downward and unites with its fellow in front of the trachea, and then becomes ramified. At this stage the thymus is a purely epithelial organ, like the thyroid, but it soon becomes invaded by a growth of lymphoid tissue which forms in lobules about the epithelial tubules, the latter undergoing atrophy until only a small concentric group of flattened cells is left in the center of the lobules. The entire gland increases in size slightly up to the second year, when it weighs between 5 and 15 grams, and then gradually disappears until about puberty, when it is replaced by fat and connective tissue. In some cases, however, the thymus is persistent until adult years.

The thymus is structurally part of the lymphatic system, and is affected in the diseases involving the lymphatic system as a whole, such as leukemia and pseudo-leukemia. With the rest of these organs it also seems to be engaged in the formation of both red and colorless corpuscles. Watney describes the thymus as containing hemoglobin in cysts and in cells located near to or forming part of the concentric bodies. He believes that this hemoglobin is collected into masses resembling red corpuscles, and which pass out through the lymphatics into the blood vessels where they become red corpuscles. There are said to be more colorless corpuscles in the veins and lymphatics of the thymus than in the arteries and lymphatics of the neck. The thymus also contains many extractives similar to those of the spleen, and a globulin has been derived from it that is capable of producing extensive intra-vascular clotting.

In addition to these functions, common to other lymphatic glands, the thymus serves an important part in the economy of hybernating animals. In them it remains throughout life, and every fall becomes the seat of a great deposition of fat which by spring has been entirely used up, the gland apparently acting as a store-house for the accumulation of fat to meet the needs of the animal during its dormant condition.

From its structure there would seem to be no relation between this gland and the thyroid, yet Baumann has found that the thymus contains iodin, which he believes is in the form of thyro-iodin. The writer has analyzed the thymus glands of four children. In one from a four months old child, and in one from a still-born infant, slight traces of iodin could be

detected. In the other two, which were both from still-born infants, no traces whatever could be detected, even when three grams of the dried grands were examined at one time.

Another thing that points to some relation between the thyroid and the thymus is the frequency of persistence and hypertrophy of the latter in exopthalmic goiter. Prof. Hektoen has reported a case illustrating this fact, the goiter weighing 100 grams, and the thymus 60 grams.

The use of the thymus extract in exophthalmic goiter has led Owen to believe that the thymus may have an inhibitory action on the thyroid secretion, supposing Basedow's disease to be a hyper-active condition of the latter. In support of this idea he cites the fact that exophthalmic goiter rarely occurs in children before the disappearance of the thymus, and also that the thyroid produces emaciation, while in the hybernating animals the thymus prevents it. None of the theories advanced to explain the function of this organ fully meet all the conditions, so that most authors are content to say that it provides some substance necessary for the development of the young, and that it atrophies on the cessation of the need of this material.

The thymus extract has been used chiefly in exophthalmic goiter, and has there met some success. Of forty-three cases collected by the writer, from the current literature, improvement was observed in thirty-one, varying from apparent cure to slight diminution of the symptoms. Todd in one case obtained a reduction in the pulse rate from 156 to 72 in three weeks, with great improvement in three other cases. On the other hand Dreschfeld obtained no results in three cases. Mackenzie, who has treated twenty cases in this manner, does not believe that the thymus has any great therapeutic activity. He thinks that its benefits are limited to an improvement in the general condition, without specific effect on the heart, goiter, or exophthalmos.

In the Breslau clinic the thymus preparations have been used in simple goiter with much success. Thirty cases were treated in this way, of which twenty were successful, the goiter not only diminishing in size but the subjective symptoms also disappeared. In some of these cases the thyroid extract had been used unavailingly. The favorable cases were all of pure diffuse hyperplasia. Ten to thirty grams of fresh sheep's thymus was given three times weekly. In other cases the thymus tablets, made in the same manner as those from the thyroid, were used. Small doses seem to give fully as good results as do the large.

The hypophysis.—This organ bears a still closer relation to the thyroid, not only in its development and structure, but in its clinical and pathologic manifestations. In origin it corresponds to the median portion of the thyroid, being developed from a diverticulum of the buccal epiblast from the posterior wall of the pharynx. This becomes flask-shaped and partly enfolds the end of the infundibulum developed from the second cerebral vesicle, the nervous portion becoming the posterior lobe and the epiblastic diverticulum forming the anterior lobe of the mature gland. The epithelial portion becomes divided up into alveoli, which in the normal hypophysis are for the most part empty, but occasionally one can be found to contain a small amount of a material apparently identical with the colloid substance of the thyroid gland. Around the alveoli is a network of capillaries, with little connective tissue stroma.

Our knowledge of the function of this gland is very limited. Experimental removal has so far given contradictory results, a muscular twitching having sometimes been produced. Administration of the gland to man and the lower animals, according to Mariet and Bosc, causes a slight and transient elevation of temperature, gastro-intestinal disturbances and a temporary albuminuria. It seems to have but a slight degree of toxicity. The same authors report the results of the administration of the pituitary body in twenty-one cases of epilepsy, from which they concluded that it was powerless to prevent or diminish the number of attacks, and they also observed a quite constant delirium three or four days after it was administered.

There can be no doubt that the hypophysis is closely related to, if not the direct cause of, the condition known as acromegalia, which is characterized by an abnormal growth of some one part of the body, most commonly the extremities or face. In practically every case of this disease the gland is found to be enlarged, sometimes to the size of a hen's egg. It is also probable that many cases of giantism are traceable to this little organ, since many of the famous giants have been acromegalic, while the skulls of giants show in many instances enormous enlargement of the sella turcica.

This suggests that the hypophysis has a trophic function, a hyper-activity of the gland therefore producing an increased growth, either local or general. In support of this theory it is stated that in the older vertebrates, and in some of the low forms now in existence, the diverticulum forming the organ does not become obliterated but remains as a tube, which is continuous with the canal in the infundibulum, and so with the ventricles of the brain and the central canal of the spinal cord. This tube is lined with ciliated epithelium, and Andriezen has observed that in animals particles of pigment pass from the buccal cavity through this canal and down the entire length of the spinal cord. In this case the hypophysis surrounds this nutritional canal, and presumably excretes into it certain substances from its glandular portion, while the nervous lobe regulates the quantity and quality of the material passing through it. It is supposed that while in the higher forms the gland loses its connection with the alimentary canal, it still retains its control over the nutrition of the central nervous system, and so exercises a trophic influence over the rest of the body. This history shows another resemblance to the thyroid, which is also originally connected to the alimentary canal by a duct, which in later life becomes obliterated.

The connection between these organs is certainly a very close one, not only in their anatomic and embryonic relations, but also in their pathologic changes, when they seem to attempt to compensate one for the other, and also to be affected by similar conditions. For example, in animals that have their thyroids extirpated there is almost always an hypertrophy of the pituitary body, and the same condition has been observed in this organ in people dying with myxedema. In the case of scleroderma described previously, where the thyroid was greatly atrophied the hypophysis weighed 0.7 gram, the average weight of twenty-one normal glands collected at the Cook County hospital being but 0.4 gram. This increased size seemed to be due to the fact that the majority of the alveoli of the

hypophysis contained colloid, in some the quantity being so large as to convert them into true vesicles, while in a normal gland the colloid material is generally found in only a few alveoli in each section, and then in extremely small quantities. The walls of the alveoli also contained an unusually large number of eosinophile cells. It would seem that in this case the hypophysis had undergone a true compensatory hypertrophy secondary to the atrophy of the thyroid. Conversely in the great majority of cases of acromegalia the thyroid has been found to be altered, sometimes goitrous and sometimes atrophic.

Fourteen normal pituitary glands were analyzed by the writer, and found to contain iodin in no inconsiderable amounts. On account of the small size of the individual glands they were analyzed together. The total weight when dried was but 1.225 grams. Altogether they contained 0.05 mg. of iodin, an average amount of 0.0036 mg. for each gland. The proportion of iodin is much smaller here than in the thyroid, about one to fifty, and suggests that in the hypophysis also the iodin exists in the colloid material, as the colloid there forms but a correspondingly small proportion of the total bulk of the organ, and if that is the case the iodin probably exists in the form of thyroiodin.

Whether the gland has any other effects than can be attributed to the iodin compound it contains, can not be said. Schaefer has found that injections of pituitary extract into dogs causes a marked increase in blood pressure with augmentation of the force of the heart beat. This is just the opposite from the effect he obtained with thyroid extracts, so he believes that this experiment negatives the theory of identity of function of these two organs.

Therapeutically the pituitary gland has so far been a failure, both in nervous and nutritional disorders. It has been tried in acromegalia, but without result. If acromegalia is due to hypertrophy of this organ, one would not be justified in using pituitary extract, any more than he would use thyroid extract in exophthalmic goiter, since theoretically, at least, this treatment would serve to augment the symptoms of the disease.

ADDENDUM.

Since this article has been in the hands of the publisher, results have been obtained from the analysis of six thyroid glands received from Baltimore and an equal number from Montreal. The Montreal glands averaged 4.49 grams in weight when dry, each gram containing an average of 2.4 mgr. of iodin, the total amount per gland being 10.77 mgr. The weight of the Baltimore glands averaged 5.41 grams, each gram containing 2.36 mgr. of iodin, an average of 12.76 mgr. for each gland. These results differ but little from those obtained from the series of glands from Boston and New York, and seem to indicate that the iodin content of thyroid glands of residents of different parts of the country is practically the same.

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An Interesting Study of the movements of the arms in walking was presented at Moscow by Dupré, who traces them to an ancestral origin, relics of a past age when man walked on all fours. They are more pronounced in children and in the less developed cerebrally, than in adults.

HOLOCAIN VS. COCAIN.

BY F. C. HOTZ, M.D.
CHICAGO.

Early in August I received from the druggists Gale & Blocki, a 1 per cent. solution of holocain for testing its anesthetizing virtues. I first tried it on a few normal eyes and on eyes with foreign bodies in the cornea, with the following results: The instillation always caused more or less smarting and burning, which however lasted but about half a minute; it also produced considerable redness of the conjunctiva (palpebral and ocular), which persisted during the whole period of anesthesia. Within one and one-half to two minutes complete anesthesia of the cornea was noted; after six minutes the sensibility of the cornea began to return, but a second instillation prolonged the anesthesia for another five minutes; and if then another drop was instilled the anesthesia could again be continued. It would seem then that the anesthetic effect of holocain can be kept up indefinitely by repeating the instillation every five minutes. With cocain this can not be done; at least I have noticed that if the eye is coming out of the cocain anesthesia, repeated instillations do not restore the anesthesia; on the contrary, I have often found the eye becoming more sensitive the more cocain was used. Holocain does not contract the conjunctival blood vessels and therefore causes neither bleaching of the eye nor lessening of the lacrymal secretion nor drying of the corneal epithelium. It does not dilate the pupil and has no effect on the accommodation. On account of these qualities one would naturally feel inclined to use this new anesthetic in preference of cocain, in all operations on the eye. But a series of comparative tests of the efficiency of the two remedies seemed to show that the anesthetizing effect of cocain (2 per cent.) is more thorough and penetrating than that of holocain (1 per cent.). I had, for instance, two patients with corneal ulcers which required the repeated application of the electro-cautery. I made one application under holocain anesthesia and the next time cauterized the same eye under cocain. Both patients, who thought cocain was used on both occasions, said the first cauterization was decidedly painful, while they did not feel the second one at all. I performed an advancement of the externus on the right eye under holocain and on the left eye of the same patient under cocain; complete anesthesia of the conjunctiva in both eyes; but the cutting and suturing of the tendon was decidedly painful in the holocainized eye, while scarcely felt in the cocainized eye.

The most telling illustration of the difference in their penetrating effect was furnished by a case of subconjunctival injections of cyanid of mercury. Several injections had previously been made under cocain and the pain following the injections was moderate and never lasted over five to ten minutes. The next injection was made under holocain and caused the most violent pain, which after twenty minutes showed no sign of letting up in intensity; I then instilled cocain and within five minutes the patient was free from pain. One week later this experiment was repeated with the same result.

All these observations seem to show that the effect of holocain is very quick, but superficial; it is therefore a very useful local anesthetic for the removal of foreign bodies from the cornea, and for operations upon the conjunctiva; but for deeper operations, and especially for those which involve the opening of the globe (iridectomy and cataract extraction), I regard cocain as the more reliable anesthetic.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION BY CARL H. VON KLEIN, A.M., M.D.

XVI.—DISEASES OF THE BLOOD VESSELS, NERVES AND SKIN. NEOPLASMS.

(*Continued from page 965.*)

Tetanus was not unknown to the German military physicians. Bilguer relates that after the battle of Prague (1757), several thousands with slight wounds died in the field hospitals of so-called "dog-cramp," in spite of careful treatment by Cothenius, Schmucker and others; and the same was true after the battle of Liegnitz. Later in the war he saw the cramp more rarely. The bad hospital air was recognized as the cause of tetanus (in which A. de Haën had already measured the higher temperatures) and Theden recommended ventilation for the improvement of the air, as a prophylactic remedy for tetanus, although a draft often induced it. Certain ligatures were also condemned as a cause of tetanus, especially in castration (Theden, Plenk and Morand). Bilguer attached great importance to local treatment, and enlarged gunshot wounds in length and depth in order to bring about widening. Plenk and Siebold amputated with success, for which method Larrey in particular later entered the lists. In internal treatment opium, especially recommended by Petit and Bilguer, stood in high repute, and large doses were given without hesitation; Windsor gave 25 drops of laudanum every three hours. Charles White gave 317 grains of poppy juice within five weeks with success. Others, on the contrary, saw no use whatever in opium, and since it was said principally to effect relaxation, they preferred quinia and wine (Rush). Charles White advocated warm baths; cold water, which the ancients applied, was endorsed by Wright in Jamaica, who poured a few pailfuls over the patients every few hours, and also by Curne, who threw his patients into water and immersed them several times. J. Hunter declared in his lectures that he would proceed with the disease according to Zamblé and have himself put into an ice-house.

Parry of Bath first introduced therapeutically the *compression of the carotid* for certain nervous diseases (1789). Rufus of Ephesus and Columbus knew this method. Parry would in this way relieve delirium, dizziness and convulsions, but noticed a return of the symptoms as soon as the pressure ceased. Severe headache, for which Felix Würtz had one of the art. temporales severed, and had "given praise, honor and thanks to God Almighty" for the cessation of the pain, Parry had relieved immediately by compression of the carotid or the temporal. He allayed pain in the feet by compression of the art. poplitea, pain from panaritium by a pressure upon both sides of the fingers. Compression of the carotid was also recommended for *facial pains*. When Fothergill first accurately described this ill (1776), already known to the ancients, to which the Versailles surgeon André gave the name *tic douloureux* (1753), he regarded

hemlock as the only alleviating remedy; hence he was obliged to believe that the evil arose from "an occult cancer-like acridity." Later he located the causes of the pain in the stomach, and gave purgatives and emetics. Galen had already recommended severing the N. infraorbitalis; Albin performed this operation, but a cure ensued only after a second intersection, while Thouret maintained (1782) that in most cases the operation had been without any result whatever.

Among the surgical diseases of the skin the terribly extensive picture of *ulcers* is most conspicuous. On no theme in surgery were so many variations composed as upon this; every writer had his own classification. Pus and ichor were considered as the actually destructive element, and therefore they defined ulcer as a dissolution of a combination, from which results pus and ichor or decomposed blood (B. Bell). It was said that an increased activity of the lymph vessels causes a waste of substance (J. Hunter). We give Richter's classification, and construct a plan out of his treatise in order to save tedious descriptions.

I.—VARIOUS CAUSES.

a. Internal causes.—1. Venereal (plain syphilis, disguised syphilis, consequences of badly treated gonorrhea); 2. Scurvy; 3. Scrofula; 4. Gout; 5. Obstructed menstruation; 6. Hemorrhage of the hemorrhoidal vein; 7. Absorbed skin eruptions; 8. Diseased urination; 9. Suppressed perspiration; 10. Irritation in the intestines, most frequently bilious or atrabilious; 11. Resulting from smallpox; 12. Bad condition of the fluids.

b. External causes.—1. Misuse of salves; 2. Foreign bodies (diseased bones); 3. Sharp irritating agents.

II.—VARYING CONDITIONS OF THE SOLID PARTS.

1. Simply unclean; 2. Callous; 3. Fungus; 4. Inflammatory; 5. Painful; 6. Varicose; 7. Edematous; 8. Scirrhous.

III.—VARYING CONDITION OF THE ICHOR.

1. Corrosive; 2. Putrid; 3. Rancid; 4. Humid; 5. Dry.

IV.—VARIATIONS IN AGE AND FORM.

1. Fresh; 2. Old; 3. Open; 4. Fistulæ. Supplementary (Complicated ulcers, salt rheum).

As to treatment there was a mass of obscurity and prejudice. B. Bell deserves the credit of introducing clear principles. It was necessary to remove the cause; if this was unknown one was obliged to address himself to the condition of the solid parts and the ichor. If this also was unavailing, then empiric means were resorted to. Naturally there were ulcers which they could not cure at all. The list of medicines in use was enormously large; those which were not swallowed were spread on. Disregarding the antidyscrasia remedies, mercury for syphilis, quinia, antimony, hemlock and cold baths for scrofula, etc., artificial warmth belonged especially to the empiric methods. It was applied in the shape of a warm bandage, glowing coals were held in the vicinity of the ulcer (Faure), or the sun's rays were caught by a burning glass and concentrated upon it (La Peyre). The other chief empiric agents were mercury, antimony ore, nitrate of silver, hemlock, belladonna, quinia, poppy juice, water fennel, chenopodium, burdock and pulverized zinc-white. As a forerunner of the present Hoff's malt extract now become well known through advertisements, a malt drink enjoyed a high place among the antiscorbutic remedies, and was also recommended for cancer (1771). They put six ounces of barley malt into a quart of water and boil it a quarter of an hour with some fennel seed and licorice, and let it stand four hours in a closed vessel, in a warm place. The patients drank two or three pounds of this daily. In external therapeutics the surgeons clung principally to the application of salves and envelopment. They finally became aware of the infinite abuse of salves. The Académie de chirurgie (1772) published a prize essay on the dangerous application of these. Faure answered this by stating that he repudiated salves and plasters entirely and B. Bell ascribed to salves only the advantage that they prevented the adhesion of the lint. These maxims were taken up by the good surgeons of all nations. That was an extraordinary advancement in the treatment of the ulcer; one needs to read only once the long winded directions for plasters composed of from ten to twenty ingredients, which Purmann and his contemporaries applied to ulcers. The value of envelopment was first recognized in the case of varicose ulcers and was later appreciated in all edematous and obstinate ulcers. As to varicose ulcers, views were divided according to whether they were considered a dyscrasic or a local affection. The ancients cut the varices out, but were already aware that this was often of no avail (Ætius and Paul of Ægina); later the double bandage and evacuation by puncture was practiced (Fabr. of Aquapendente). Compression for varicose vein was known to the Arabians; Avicenna described a compression bandage from the lower part of the leg to the knee. But they did not venture to use compression if ulcers also were present besides the varicose vein. Fabr. von Hilden and Scultet first applied a compression bandage to the ulcers. Subsequent time forgot these methods, until Theden won the distinction of snatching them from oblivion (1771). Else, Bell, Richter and others imitated him. In France, Desault, who highly prized compression in general as one of the best resorptive methods, adopted this bandage and attained the best results in varicose as well as all callous ulcers. He thought that for a relapse laced stockings of dogskin were the best, an old remedy already applied by Fabr. of Aquapendente, Wiseman and Scultet. To this treatment was added the method of the Oxford professor, Rowley, who discarded rest and the horizontal position along with the internal use of saltpetre, and had the patient walk about considerably (1771). Eight years later this method was still entirely unknown in London. Baynton improved the compression bandage by his well-known envelopment with adhesive plaster (1797). When old and large varicose ulcers gave much pain and bled often and profusely, a ligature was applied above and below the ulcers (Richter); and the vena saphena was constricted above the knee-joint (E. Homer). It is of no interest to follow farther the therapeutics of ulcers. But we will mention that the gastric juice was announced from Geneva as an excellent means to allay stench and pains (1787), and we will close with the homeopath, Samuel Hahnemann. He wrote instructions for the fundamental cure of old injuries and putrid sores (1784). The closing words characterize his work: "Who has had the opportunity to make so many observations as I; who allows himself to be so influenced and absorbed by the well being of his neighbors as I feel that I am; who hates so much the prejudice and the partiality for the old and the new, or in general the regard for any great name, and so earnestly strives to think and act for himself as I feel evident in myself, who can with me see the excellent successes of his own industry, successes which almost never deceived, since they almost always disappeared with other phy-

sicians using different treatment?" Richter's criticism left nothing to be said; unintelligible, pompous, vague, impractical rubbish!

This surgeon considered the *furuncle* as a swelling which arises from stagnant, thickened humors, in part from coagulated blood; its thrombus he regarded as a cyst of cellular tissue or perhaps a cutaneous gland. He considered the *carbuncle* as a malignant swelling arising from corrupt matter extracted from the blood, and he recommended an early incision. *Erysipelas*, either idiopathic or only a symptom, was an inflammation mostly arising from biliary acridity or suppressed perspiration. Gregory and J. Hunter had already taught that any specially poisonous matter has such an effect. It might be combined with inflammatory (erys. phlegmonodes) or putrid fevers (erys. malignum). Special kinds were the laminated erysipelas, with which the so-called girdle or St. Anthony's fire was included, and a habitual or chronic erysipelas which often proceeds from affections of the liver. The treatment consisted in diaphoretic remedies, purgatives and emetics; only in serious cases did they resort to the lance. As external remedies, which were in general regarded as injurious, they permitted only little bags of chamomile and elder to keep the part moderately warm and protect it from the air. They allayed severe pain with a piece of flannel which was moistened with elder flower tea. In suppressed erysipelas, bleeding, mustard plasters, blisters and emetics were necessary. These were the principles of Desault and Richter.

Burns were divided into different degrees, of which Heister, Richter and John Hunter accepted four, which covered the ground pretty well. Heister distinguished rednesss, blister, superficial suppuration and scar formation; Richter, mild redness, redness with swelling, severe pain and fever, blister and mortification; J. Hunter, superficial inflammation, deeper inflammation, skin eschar and deep charring. In the two first degrees of Richter, brandy and oil of turpentine were applied (J. Bell), and Theden's arquebusade-water; in cases of severe pain emollient pulps and oils, especially linseed oil. The blisters were carefully opened and covered with linseed-oil, lead or lime-water. In case of *freezing* the rule was to warm the part very gradually by rubbing it with snow or ice-water. Chilblains were most effectively treated in the same manner, for which there was besides a mass of balsams, oils and spirits. The different kinds of *panaritium* were classified then as now; the pus lay either just under the epidermis or the nails, or the inflammation had its seat in the cellular tissue, in the sheath of the tendons or in the periosteum. Richter added, besides, a dry felon in which the soft parts were naturally constituted, but the bone had been transformed into fat. The methods for dispersion were bleeding, leeches (Schmucker), envelopment of the fingers upward to the arm (Theden), immersing the fingers in hot water (Platner), in ice-cold water (according to Aëtius), etc. Richter gave the best advice when, if the conditions had not improved by the fourth day, he made an incision whether the pus had formed or not; for great relief always followed even if only blood came. In inflammation of the periosteum he early made an incision quite to the bone in order to induce a relaxation; in inflammations below the nail he scraped it quite thin with a piece of glass and cut out the point of the nail with the bistoury. An inadequate treatment of panaritia even led to amputation of the fingers, as one frequently saw in Paris at the end of the century.

Warts were supposed to arise, for the most part from local, sometimes from internal causes (syphilis, and undue use of milk-foods for children). Among the local remedies were spirits of sal ammoniac, butter of antimony, spanish fly plaster, compression, binding, and the sticking of a red-hot needle into the root of the wart. Corrosives and extirpation demanded great precaution. It is not without interest to notice how the common *corn* was found worthy of study by the two most celebrated Dutchmen. Albin investigated it anatomically (1754), and found that the hardness consists entirely of epidermis, that after slight maceration it can be stripped off, and underneath the skin-papillæ are atrophic while they turgesce strongly in the vicinity. Camper gave the best remedy for the disease where the shoe pinched. We will insert his interesting essay here:

What is the best shoe? P. Camper answered this question (1781), when his pupils declared that the material for dissertations was exhausted. He wished to show them that even the most unimportant subject can become interesting. "It was thought that I would never venture to publish an essay under my name. I condescended to it and wrote." Posidonius has asserted that the shoemaker's art was very obviously devised and perfected by the philosophers. Anatomy and mathematics is the basis of their work. The work of the cobblers of that time could only serve to deform the toes and to induce corns; even the most skilful shoemakers took the measure incorrectly. The ladies of fashion wore very high, pointed heels, which, in order to make the foot appear smaller, were placed as far as possible under the back of the foot. The heel was hollowed before and behind, and ended in more or less of a point, just as do the boots of the present women. Camper said that the high heels not only made the ladies walk upon the points of the feet badly and never comfortably outside of their own houses and the well-paved streets; that in consequence of the insecure footing, in the case of girls, the spine became bent insomuch that it caused difficult parturition, because in severe curvature of the spine the head of the child was squeezed. It was customary in Dutch villages, but not in the cities, to make a special last for each foot, as the same shoe could never fit both feet well. Camper gave the following rules: 1. The shoemaker must first measure the foot when flat and then when bent in order to determine the length of the sole. 2. A special last is necessary for each foot. 3. The breadth of the foot must be measured with a curved compass. Most shoemakers fail in this and make the soles too small because they think that the upper leather will stretch sufficiently. 4. The end of the shoe must be round in order to give more room to the toes. 5. The point should be bent somewhat upward in order to pass more readily over uneven stones. 6. The height of the heel must be regulated according to the roughness of the streets and it must be placed so far under the heel of the foot that the center of gravity rests upon it. 7. The buckle should touch the cuneiform bones. Camper demanded soft uppers and discarded cork soles because they were not yielding and did not absorb moisture. Among the ailments which were superinduced by bad shoemaking he submitted the following: callous cuticle, pains at the joint of the great toe caused by too small soles, warts under the nail of the great toe, caused by too short a sole and too stiff leather, and also corns.

That a too narrow shoe was the chief cause of corns was as well known at that time as now. They sought to relieve the presence by a plaster made of several strips of linen with a hole in the middle the size of the corn. Richter promised sure cure in a short time if a resolvent salve or a volatile liniment were rubbed on the corn several times a day and a warm foot bath taken for half an hour morning and evening, the corn being vigorously rubbed with soap. Then the softened corn should be pared off with a dull knife. This treatment repeated daily should accomplish a complete cure in one or two weeks. The number of other remedies was large: Soap plaster, mercury plaster, fat, and an infallible plaster of gummi ammoniacum with yellow wax (ana 2 ounces) and verdigris (6 drachms), etc.

We come to *neoplasms*, in considering which we must not forget that we find ourselves in a period before the time of Bichat, when deep obscurity as to the tissues of the human body still prevailed. Under the word tumor they understood every unnatural elevation upon any part of the body, hence the classification of swellings approaches infinity. Plenk followed the botanists and adopted eighteen species: Inflammation, abscess, carbuncle, callus, edema, thrombus, cyst, excrescence, exostosis, joint swellings, earthy swellings, emphysema, salivary swellings, gall swellings, urinary tumors, swelling of the breast, organic tumors and false hernia. Each species was divided into varieties, so that finally their number reached 120. Thus, for example, he counted among inflammatory swellings phlegmon, erysipelas and angina; among callous tumors scirrhous, carcinoma and scrofula. Richter's classification was simpler, which we will chiefly follow on this subject. He arrayed on one side inflammatory diseases, wounds and ulcers, "the ordinary uninflamed tumor," as his chief division, and to these he added callus and carcinoma, atheroma, exostosis, aneurysm, varices, polyp, warts, corns, edema and emphysema.

The former definition of *scirrhus* as a hard, painless swelling in a glandular part, caused by blood stoppage with a simultaneous tendency to gangrene, Richter set aside and would understand under that term nothing else than a callus which arose on some part, from any cause. Unlike Heister, he did not consider scirrhus as a result of inflammation. The causes were external (contusions), or internal (syphilis, scrofula, gout, passions, etc.). Schmucker complained of the stiff fitting corsets, a legacy of the Marchioness of Pompadour. He read the ladies and "effeminate men" a severe sermon on their tasteless and uncomfortable fashions in clothes, which were considered beautiful only because they were new. Richter also delivered a little philippic against stays as the most objectionable piece of apparel, but "many a matron who has laced during a lifetime can overcome the entire demonstration of the evil consequences of it. A too strict dietetist is like the rigid moralist who gives rules which he himself never keeps, and which are daily transgressed without harm, and hence he is derided." Scirrhus either remains benign for a lifetime, or it becomes painful, breaks, and changes into an open malignant carcinoma. As opposed to this opinion, Acrel maintained that a benign scirrhus could never become malignant, a malignant one could never have been benign. They sought to scatter the scirrhus or to cut it out. For the former purpose they used hemlock, mercury, belladonna, gummi ammoniacum, digitalis, warmth (rabbit skin), and electricity (already attempted by de Haën for tumors). J. Hunter extolled compression for solid tumors and observed that the farther development of neoplasms was arrested by this means, and sometimes they were entirely exhausted. Desault also dissipated "scirrhosities" of the anus by compression with probes. But since resolution seldom succeeds, one should not be long delayed by these means, especially if there is an immediate danger that the scirrhus may soon become malignant. If it is at all possible an operation should be performed at once, since with the failure of the resolvent remedies every delay is dangerous. As a contra-indication of the operation, Richter allowed those cases in which the scirrhus could not be clearly extirpated, and those in which tumors were present on other parts of the body where an operation could not be made; for all which were left changed invariably into carcinoma. The possibility of a relapse was admitted.

The scirrhus might also turn into a carcinoma. This view was characteristic of that time and had as a result that they regarded scirrhus and cancer as diseases of the same kind. The transformation announces itself by pricking, burning and itching, which by degrees becomes more severe and continuous. The tumor grows and becomes hard, the skin red and blue and the blood vessels in the vicinity swollen. At this stage an occult cancer is spoken of. Left to itself the tumor breaks and an open cancer ensues. The sore is very painful, has a corroded surface covered with fungous or hard excresences and hard edges; it bleeds readily and profusely and exudes an acrid, ill-smelling fluid. But not many cases begin with these symptoms; there is no pathognomonic characteristic by which carcinoma is distinguished from other abscesses, and neither Richter nor Schmucker would trust himself to answer with certainty the question as to how one might recognize a cancer. Hence it happened that many surgeons practiced many abuses in diagnosis; if an ulcer appeared bad, if it would not heal, if the cause was not known, it was called carcinoma. The search for new remedies forced the study of the pathology of the carcinoma entirely into the background. The efforts to spread new light by means of experiments on animals were only isolated. Peyrilhe, who won the prize of 1,200 livres offered by Pouteau of Lyons for an essay on carcinoma poison (1773), came to the conclusion that there is no especial carcinoma poison, but it consists only of a putrid matter which is first formed in the body upon the appearance of the disease. He proved contagion by the fact that a small incision made on a dog became very malignant after an injection of carcinoma fluid. Le Febure found that dogs ate without the least injury bread which had been soaked in carcinoma fluid (1775). Richter also did not believe that the carcinoma proceeds from a specific poison and requires a specific remedy; the generation and course vary so extraordinarily that apparently the causes are also of widely differing kinds. But Richter and also B. Bell had the firm conviction that carcinoma is at first only a local difficulty and that the cachexia does not arise until the corrupt matter has infiltrated into the fluids. The curability of the carcinoma was firmly believed in although it was always accomplished with great difficulty. Pott said in this connection: "We are not yet so fortunate as to possess a medicine which can remove a cancerous condition of the blood; when the whole body is thus infected neither our knives nor our medicines are of any avail; they can, indeed, eliminate the local ailment, but they have no effect upon a general malady in the body. Whoever speaks otherwise speaks untruth and whoever believes anything else is in error." Carcinoma of the breast appeared to be the most malignant of all, and the prognosis in general was unfavorable if the swelling had developed from a scirrhus.

The treatment was directed above all to the causes and against the venereal, scorbutic or gouty origin. But since in the great majority of cases the cause was unknown the operation remained as the only remedy. So thought most of the surgeons: Heister, B. Bell, Camper, Le Vacher, Le Cat, Pouteau, Richter and others. To the last named it was clear that the oper-

ation would succeed much oftener if it were regarded, not as the last resort but as the first; the operation must be performed as early as possible, while the affection is still local. Other remedies were seldom of any assistance to him; on the contrary, they always occasioned an irreparable waste of time. That physicians acted in a conscienceless and undutiful manner when in the hope of saving the patient by medicine he allowed the precious time to elapse within which the knife could still afford a prospect of certain help. Heister considered a cure by means of medicine as impossible and all nostrums as swindles. Richter was well aware that the operation did not always succeed and that under the most favorable auspices the outcome was often unsuccessful, while under very favorable circumstances it was occasionally of assistance. This determined him to operate in cases of doubtful prognosis and never to hesitate when an operation appeared in any measure to be indicated. If it failed then it still lengthened life. As contraindications, he noted that cases in which the disease was no longer local, but was general, where all the cancerous substance obviously could not be extirpated, where a second swelling not susceptible of operation existed, of finally where another malady had arisen which made the successful outcome of an operation impossible. To eradicate all the cancerous substance clean and carefully, was his watchword. Heister said the same thing: "If a carcinoma can not be entirely removed it should not be touched, because nothing will be accomplished by so doing, the patient will only suffer useless pain and will die sooner than he otherwise would." The skin should be spared as much as possible and an attempt should be made to heal the wound with prima intentio. Some weeks before the operation an artificial sore was created in the neighborhood of the tumor and kept open for a time (Richter and Desault; to the contrary, Pouteau) and the patient was given milk foods before and after. In order to prevent a relapse Heister recommended a good diet during the whole life, forbade acrid, salt and sour foods, and in spring and autumn recommended bleeding and the drinking of mineral water; Pouteau had patients drink ice-cold water.

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Among the empiric remedies most prominent were hemlock, quicksilver, belladonna, quinin, arsenic (the chief component of the specific of Guy and Frère Cosme), aconite, onopordon, the leeching of the sore by toads, and other remedies. In the 70's they began to abandon these; only quacks and dabblers deceived the public with them. The most celebrated was hemlock, prized by Störck (1761). Now, A. de Haën, B. Bell, Hill, Schmucker, Schneider, Lange and Van der Haar asserted that this remedy had never been able to cure a real carcinoma, and at best could only diminish the smell. In order to test this remedy, Schmucker had it brought from Vienna and actually established a separate hospital with thirty patients suffering with scirrhus tumors. After experiments covering five months he declared that hemlock was actually injurious. So it went with almost all remedies. Pouteau denied them all curative properties, and Richter had tried them all and had no confidence in them; Schmucker also, and C. C. von Siebold, and in fact all the good surgeons thought likewise.

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The Association was called to order at 10 o'clock by the president, Dr. H. B. HORLBECK of Charleston, S. C. After the announcement by Dr. Benjamin Lee, the Chairman of the Committee of Arrangements of the various meetings, and plans for the entertainment of the members, the report of the Executive Committee was read by Dr. Charles O. Probst, secretary of the Ohio State Board of Health, who was made secretary *pro tempore* in the absence of Dr. Watson, who had resigned the position. Each day a number of new members were elected who had signified their desire to join, and had been approved by the Committee.

Dr. FREDERICK MONTIZAMBERT, General Superintendent of

Quarantine of the Dominion of Canada, read the report of the Committee on Steamship and Steamboat Sanitation. In connection with the relatively shorter voyage of the steamboat, a few points present themselves which it would seem well to emphasize. Passengers' bedding, those portions which are not regularly laundried, blankets, mattresses and pillows, should be freely exposed to the air, and, if possible, to the sunshine, after each trip. The somewhat common usage on inland steamboats of having the dining room on a deck below the water line is not to be commended. This position renders cleanliness and ventilation much more difficult, and certainly tends to unwholesomeness. The holds of the steamboats are more likely than those of steamships to become the recipients of the storage of perishable articles of food and freight. They therefore need to be frequently emptied, cleansed and freely whitewashed. The Committee can not allow the opportunity to pass without again referring to the all-important matter of the exposure of the traveling public on steamboats, as well as elsewhere, to the danger of contracting disease from fellow passengers suffering from consumption, who in their expectorations scatter broadcast the infectious material. Objectionable and indefensible as it is at all times, with steamboat saloons closed and artificially heated, the expectorator's filthy habit becomes especially dangerous to other passengers. The sputa drying on the deck rises as dust to be inhaled, and to add to the great list of the victims of this fell destroyer of mankind. All spittoons that it may be necessary to provide should contain water or a disinfecting solution, which should be frequently changed. It would be well that all States, provinces and citizens should add to their sanitary codes a prohibition against spitting on the floors and decks of ferry and other steamboats, and should require all steamboat companies to prominently post in their boats printed notices forbidding this spitting, and to enforce the same. This is doubtless a matter rather difficult to enforce, but any measure of success would be a definite and positive improvement upon the existing conditions. With the advancing knowledge on the part of the general public and belief in the contagion of consumption and the methods to be employed to limit and prevent its spread, to which education such printed notices may be made to contribute, an ever increasing degree of success may be confidently hoped for.

The next paper read was by Dr. EDUARDO LICEAGA, President of the Supreme Board of Health of Mexico, and Dr. JOSE RAMIREZ, of that Board.

A CONTRIBUTION TO THE STUDY OF YELLOW FEVER FROM A MEDICO-GEOGRAPHIC POINT OF VIEW.

In the port of Vera Cruz, which can be considered one of the sources in which this disease obtains a spontaneous origin, only three cases have appeared during the period of study and these all came in the month of June. With respect to other points on the Gulf coast and especially the ports we can safely assert that not a single case has occurred during this period. Passing to the Pacific coast and bearing in mind the terrible epidemic that in the year 1884 desolated that coast, we find that the Supreme Board of Health of Mexico has taken special care to prevent the disease from being imported from the Central American countries where, unfortunately, it now prevails as an epidemic. As far as regards ourselves, we have thoroughly proved that no source of yellow fever exists on the Pacific coast of the Mexican Republic; therefore, on receiving notice that fatal cases had appeared that were supposed to be this dread disease, the Board hastened to send to the port of Manzanillo one of its delegates who, through his own scientific knowledge as well as through his long residence in the port of Vera Cruz, has obtained a perfect acquaintance with the symptoms of yellow fever. Dr. Narciso del Rio, the person named, reached the port and made a careful study of the last cases that presented themselves. This investigation showed him that what was suspected to be yellow fever was nothing of the kind. It was probably a paludic fever of hemorrhagic form which, through the exceptional conditions brought about by the putrefaction of a large quantity of dead fish around the town, had assumed somewhat the form of a typhus. After the first days of October no new cases occurred. Other slight epidemics were mentioned. Once more it is necessary to show the difficulties which are encountered in establishing an exact diagnosis between yellow fever and certain forms of paludic infection that in hot countries assume an extremely similar aspect, and the serious character generally borne by that disease, so much so that those persons not accustomed to observe the two affections are often uncertain as to the diagnosis. These doubts will in the future be dissipated if, as we all hope, the discoveries of Dr. J. Sanarelli are confirmed. Dr. Sanarelli appears to have discovered the microbe of the fever, in the city of Montevido. A knowledge of the cause of the disease will not only allow us to establish the diagnosis, but also no doubt facilitate our means for attacking it in a certain manner. The present epidemic now prevalent in some parts of the coast of the United States will give physicians in these localities an opportunity to study under exceptional circumstances the efficacy of isolation and disinfection. The same epidemic has now presented a phenomenon that is unique up to this date, that the port of Vera Cruz, which three months had not suffered from the disease should now be taking serious precautions to avoid contagion from the United States, as at this moment happens when the steamer *Uto* is anchored in that port, having arrived from Mobile with three patients who have been ordered to be isolated and under observation in the Lazaretto of Sacriflcio.

Dr. William Bailey of Louisville, Ky., alluded to the case of a man who came to his city from Ocean Springs where the present epidemic appears to have originated. He displayed marked symptoms of yellow fever, and subsequently died in a sanitarium after having shown every symptom of this disease. Notice was sent to the authorities of New Orleans and the latter were advised to investigate the disease at Ocean Springs. Yet in the face of the positive diagnosis of this case, it was decided that the disease at the Springs was not yellow fever. A week later, new cases developed at the Springs, and the epidemic was recognized.

Dr. S. H. Durgin of Boston, alluded to the vast importance of bacteriologic work in making the diagnosis of the disease.

Dr. Roque Maconzet of the City of Mexico, agreed on this point, and especially as to the great difficulty in making the diagnosis of yellow fever.

Dr. P. H. BAILHACHE of the U. S. Marine-Hospital Service said that Dr. Durgin struck the key-note in his remarks. A determined effort to investigate the disease to a finish and an abundant appropriation by Congress to carry on the investigation was the thing needed. Referring to Dr. Bailey's statement regarding a case of yellow fever in Louisville in August last, Dr. Bailhache wished to confirm this statement, as the same facts were known to the Bureau. In regard to the remarks of Dr. Liceaga criticising the report of tne U. S. Consul in Mexico, who stated that there were two cases of yellow fever in Vera Cruz, Dr. Liceaga denying the statement, Dr. Bailhache observed it was an unusual thing to charge consuls with giving too much news regarding the health of their stations, as, on the contrary, they were usually charged with not giving enough. He added that their information was based on the reports furnished them by the medical or sanitary authorities, and not on their own knowledge.

Dr. RAYMOND said that Sanarelli's claims to have discovered the bacillus of yellow fever had not as yet been substantiated, and it was probable that it was the same discovery made by Surgeon General Sternberg.

The discussion was now closed and Dr. A. L. Gihon, U. S. Navy, retired, rose to a question of privilege. In the report of the U. S. Marine-Hospital Service he had found that Dr. Bailhache, when reporting the action of the Committee on National Legislation of the meeting of this Association at Buffalo last year said: "The report of the Committee being of special importance to the Service, I deem it proper to state that said Committee presented to the Association the following resolution, which was referred under the rules to the Executive Committee:

"*Resolved*. That it is the sense of this Association that the Committee on National Legislation be continued and that efforts be made to influence the United States Congress to establish a Department of Public Health at Washington, D. C., and to this end it is recommended that the powers of the Marine-Hospital Service be enlarged and so organized as to provide for an advisory council composed of representatives from the State Boards of Health.

"The Executive Committee returned the resolution to the Association in the following emasculated condition:

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"Upon inquiry I learned that a retired officer of the Navy took it upon himself to overslaugh the work of the Committee on National Legislation, whose unanimous recommendation would seem to entitle it to more respect, and upon his individual demand the resolution was shorn of its only practical solution."

After reading the above Dr. Gihon emphatically declared that he was the retired officer alluded to, and called upon Dr. Bailhache to explain what he meant by such a statement.

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Dr. S. H. Durgin of Boston, alluded to the vast importance of bacteriologic work in making the diagnosis of the disease.

Dr. Roque Maconzet of the City of Mexico, agreed on this point, and especially as to the great difficulty in making the diagnosis of yellow fever.

Dr. P. H. BAILHACHE of the U. S. Marine-Hospital Service said that Dr. Durgin struck the key-note in his remarks. A determined effort to investigate the disease to a finish and an abundant appropriation by Congress to carry on the investigation was the thing needed. Referring to Dr. Bailey's statement regarding a case of yellow fever in Louisville in August last, Dr. Bailhache wished to confirm this statement, as the same facts were known to the Bureau. In regard to the remarks of Dr. Liceaga criticising the report of the U. S. Consul in Mexico, who stated that there were two cases of yellow fever in Vera Cruz, Dr. Liceaga denying the statement, Dr. Bailhache observed it was an unusual thing to charge consuls with giving too much news regarding the health of their stations, as, on the contrary, they were usually charged with not giving enough. He added that their information was based on the reports furnished them by the medical or sanitary authorities, and not on their own knowledge.

Dr. RAYMOND said that Sanarelli's claims to have discovered the bacillus of yellow fever had not as yet been substantiated, and it was probable that it was the same discovery made by Surgeon General Sternberg.

The discussion was now closed and Dr. A. L. Gihon, U. S. Navy, retired, rose to a question of privilege. In the report of the U. S. Marine-Hospital Service he had found that Dr. Bailhache, when reporting the action of the Committee on National Legislation of the meeting of this Association at Buffalo last year said: "The report of the Committee being of special importance to the Service, I deem it proper to state that said Committee presented to the Association the following resolution, which was referred under the rules to the Executive Committee:

"*Resolved*. That it is the sense of this Association that the Committee on National Legislation be continued and that efforts be made to influence the United States Congress to establish a Department of Public Health at Washington, D. C., and to this end it is recommended that the powers of the Marine-Hospital Service be enlarged and so organized as to provide for an advisory council composed of representatives from the State Boards of Health.

"The Executive Committee returned the resolution to the Association in the following emasculated condition:

"*Resolved*, That it is the sense of this Association that the Committee on National Legislation be continued and that efforts be continued to influence the Congress of the United States to establish a Department of Public Health at Washington, D. C.

"Upon inquiry I learned that a retired officer of the Navy took it upon himself to overslaugh the work of the Committee on National Legislation, whose unanimous recommendation would seem to entitle it to more respect, and upon his individual demand the resolution was shorn of its only practical solution."

After reading the above Dr. Gihon emphatically declared that he was the retired officer alluded to, and called upon Dr. Bailhache to explain what he meant by such a statement.

Dr. BAILHACHE asked Dr. Gihon if he had not struck it out?

Dr. GIHON replied that he did not, but that the Committee of twenty-five did so, of which he was only one, and asked if Dr. Bailhache thought the Committee of twenty-four other men were led by the nose by him? Upon being asked if he had not spoken in favor of this striking out, Dr. Gihon said he had.

The question of order being now asked as to two persons thus holding a talk on the floor, the President decided it was unparliamentary, and after both were seated, Dr. Gihon was given the privilege of continuing. In reply, he remarked "that any of the Executive Committee might sustain him in what he said—I am one of those who believe that the Marine-Hospital Service should not be enlarged so as to become a National Board of Health." Here the matter closed, Dr. Bailhache declining to reply.

The report of the Committee on Sanitation, with a special reference to drainage, plumbing and ventilation of public and private buildings, by Dr. J. W. HUGHES of Montreal, was read by Dr. LEAL. An exhaustive treatment of any of these subjects would require a volume; therefore he confined himself to the one subject of the ventilation of the plumbing system that serves for the conveyance of the house wastes, the sewage, and that are to be finally disposed of, as far as any building is concerned, when they reach the sewer. He gave technical description of plumbing matters, then continued: It is no more possible to lay down a rule covering every possible contingency called for in scientific plumbing and ventilating than to apply fixed rules to the practice of medicine. If it were, there would be little need of skilled and experienced physicians. The principles of scientific medicine and plumbing are fixed, but the application of these principles calls for the intelligence acquired by education and developed by practice. Much injury has been done by attempting to frame plumbing by laws that will apply to every case. The conditions vary in almost every building, and to adapt the principles to the special requirements requires not only practical but scientific knowledge. If the American Public Health Association would make a study of the general principles covering this question, and embody them in a code having its endorsement, leaving the practical application of these principles to those whose duty it is to apply them, much good would result.

The subject was continued by the reading of a paper on the

DRAINAGE, PLUMBING AND VENTILATION OF PUBLIC AND PRIVATE BUILDINGS,

by Dr. JOHN L. LEAL, Health Officer of Paterson, N.J. The importance of the subject can not be over-estimated. One of the results of civilization is that a very large proportion of mankind passes its time within four walls. With the advances of civilization these conditions become more and more unlike the primeval condition, and hence more and more harmful. There are three points: 1, every building intended for occupancy should have some special means of ventilation; 2, these means should be commensurate with the requirements of any particular building; 3, the more simple the means the more likely to be their operation. The object of plumbing is first to withdraw from a building immediately all waste products of life, the presence of which would prove harmful to health, then to prevent harm to the inmates arising from these products after removal. Not only are we threatened by the presence of these substances, but we are also threatened by certain dangers inherent in the best systems at our disposal for ridding ourselves of them. He then described at some length the various properly constructed appliances for the carrying out of these plans.

Dr. A. C. ABBOTT, Philadelphia, objected to the interpretations of the conditions to the effect that modern teaching on ventilation as formulated from exact examinations does not justify the belief that there is present, in improperly-ventilated houses, substances capable of inducing specific diseases, but that the evil results of bad ventilation are principally seen in the personal discomfort to which they give rise. Unless the plumbing is so defective as to allow of leakage into the house of actual infective matters, it is impossible by any scientific method to demonstrate in the air of otherwise badly plumbed houses matters that can be said to stand in causal relation to disease. Experiments on the relation between the gases from sewage have failed to demonstrate that the former stand in any relation as causal of the disease. Statistics show that the health of workers in sewers, on drainage fields, and those employed in and about glue factories, is in general as good as that of the community at large. As to the drainage part of the report, he was fully in accord with the writer, and mentioned the conspicuous instances where improvements of a locality had resulted in improvement of the health of said locality.

Dr. DURGIN then read the

REPORT OF THE COMMITTEE ON CAR SANITATION,

prepared by Prof. S. H. WOODBRIDGE of the Institute of Technology, Boston. It would seem that something like interstate agitation and regulation are needed to any legislative advancement in this field of hygienic improvement. Hence it seems the better way that the movement should originate within, or at least be fostered by, some strong railroad corporation which shall set the pace for other railroads to eventually put themselves in step with. He described a new form of sleeping and parlor car.

ABSTRACT OF REPORT OF THE COMMITTEE ON CAR SANITATION

by GRANVILLE P. CONN, President State Board of Health, New Hampshire. The committee reported that during the past year more than ordinary interest had been exhibited in this work. That this subject has been discussed by the press, by workmen connected with railways and car construction, and that one State had, through their legislature, instructed their Board of Railway Commissioners to investigate and report upon the availability of various systems of ventilation. The report signified that the aim of the Committee was to give a *résumé* of what had taken place since the last meeting of the Association, in order that the Association may keep in touch with all who are interested in this subject.

The Committee took up first the work of the Railroad Commisioners in Massachusetts, who were ordered to report on systems of ventilation now in use, and who held public hearings at the office of their board in November and December, 1896. Several quotations were made from the report of this Committee, and it was shown that the interest manifested was not such as to cause enthusiasm on the part of the friends of sanitation as the report says: "With the exception of the railroad officials and the patentees of ventilating devices, only three persons made any remarks at the hearings, and no one of these urged the expediency of legislative action."

It was shown that three patented systems for the ventilation of cars were presented at the hearings and represented by the inventors, that "each of these inventors claimed, and apparently with entire sincerity as well as absolute conviction, that his is the 'only perfect system of car ventilation,' and that all other methods are comparatively worthless."

The questions considered by the board were arranged in the following manner:

1. "Are the methods of ventilating passenger cars now in general use reasonably satisfactory?"

2. "If not, are there any methods which have been shown by experience or otherwise proved to be on the whole more satisfactory?"

3. "Is it at present desirable that there should be any specific legislation on the subject?"

It was evident that the Railway Commission took up these questions deliberately and patiently heard all there was to be said regarding their availability, also gave due attention to what was said by railway managers as to the practicability of these devices. The report shows that the Railway Commission were not impressed with the idea that the public were inconvenienced to any great extent, as they say: "The evil does not appear, however, to be by any means so serious as it is sometimes depicted by theorists, valetudinarians, and the inventors of ventilating apparatus; and the present methods, if properly used, would undoubtedly give much better results than they do. The trouble frequently appears to be that the means provided are not intelligently and systematically used by trainmen, or that their use is not permitted by passengers."

The Committee proposed a remedy which was incorporated into their report as follows: "Great improvement could, however, be made in the condition of the air in our crowded passenger cars if the trainmen were compelled to pay proper attention to the ventilators. A regular set of instructions should be furnished them for their guidance and division officers should be instructed to pass through the train at every opportunity and to report cases where the ventilators have been neglected and the air is overheated and foul, to the division superintendent for discipline. The men would then soon learn to attend to this part of their duty. Sleeping car companies should have a code of rules printed and posted in the cars and their porters and conductors should be made to observe such rules."

The conclusion of the Board of Railroad Commissioners was in part as follows: "It has not been made apparent to the Board, by the testimony at the hearings or otherwise, that there is grievous complaint by the traveling public about the ventilation of passenger cars, on either railroads or street railways; or that there is any general demand for radical reform or relief through mandatory legislation. Much more frequent com-

plaints come to our ears of the overheating or underheating of cars, than of their foul or vitiated atmosphere. It is perhaps safe to say that the complaints of bad or insufficient car ventilation are not more numerous or well grounded than those which are heard with respect to many public buildings and places of assembly for whose ventilation experts of high repute have been employed and no expense has been spared; and the problem is less difficult and complex in the latter than in the former case."

"It is evident from all that has been said, that car ventilation is still in its experimental stage, and that no artificial system or method has as yet been so fully perfected and so thoroughly approved by successful use, as to warrant the Board in recommending its general adoption under the constraint or regulation of law. The Board accordingly reports, as the result of its investigation, that no specific legislation on this subject appears to be at present expedient."[1]

After commenting on this report, the Committee in discussing the importance of thoroughly educating men in any and all duties which they are expected to perform, said: "Let us hope in the future the 'School of Instruction' on our railways will be made to include as much of the elementary principles of hygiene and sanitation as to insure not only courteous treatment from trainmen, but also the best possible application of such devices as are being used in heating, lighting and ventilating the coaches. We are ready to admit that no amount of training will furnish brains to any class of people, but to educate men thoroughly in the work they are expected to perform, will insure better results and less disappointment than with untrained employes."

The Committee gave newspapers great credit for having done a great deal to educate public opinion in the matter of car sanitation, quoting liberally from the Boston daily press in this matter of which the following is an example: "Under the conditions we have just named—the absence of dust, smoke and cinders—traveling by railway in summer would be transformed from a dreaded ordeal into a decidedly agreeable experience. Those who have ridden in the electric cars over a greased track-bed do not need to be told that there is something positively exhilarating in thus rushing through the pure air, particularly on a hot day in summer. The experience would be precisely the same in railway trains if the railway companies would make the relatively slight reforms needed to do away with the nuisances to which we have referred. Under such circumstances the traveler at the end of a 500 miles' trip on a railway train would be just as free from the sense of dirtiness as though he had made the same distance on a sailing vessel instead of a railway train. This improvement is of vastly greater importance to the traveling public than that which consists in having bathtubs and barber shops on railway trains, and is one which, apparently, can be brought about at relatively slight expense. In other words, it is much more a question of efficiency in administration, in using the best methods, than of increasing corporate outgo."

The Committee referred to the fact many large roads have an advertising department complete in all its details, with a competent head to direct its work, and said: "If this department would keep up to date, it must take cognizance of the sanitary condition of trains, stations, yards and grounds. That as people are traveling across the continent and from State to State in the pursuit of health or pleasure, they pay well for their accommodations, and while it is pleasant for them to have the press agent of a road describe in an agreeable manner the resorts to which his road would invite them to make a home, yet, however beautiful such resorts might be when reached, and however much enjoyment might be taken, and rest obtained while sojourning in these elegant and palatial hotels, yet to be carried to such a place in unwholsome and filthy trains, and waited upon by discourteous servants of the road, will do a great deal toward destroying any influence which the advertising agent may have created."

Reference was made to the epidemic of yellow fever in the south, and said: "It is generally admitted that yellow fever is a preventable disease, and if so, interstate and municipal authorities along the Gulf coast are responsible for its outbreak. It is true that railways, like individuals, have to take their chances of an occurrence of epidemics that will interrupt business relations, yet at the present time, with all the power that is granted by federal and State governments, someone must be negligent or inefficient, to allow a disease of this character to obtain a foot-hold and spread itself over three or four States."

The disinfection of railway coaches was taken up and in the discussion of this question, reference was made to the work of the United States Marine Hospital Corps and of papers read by Surgeon General Wyman and Dr. Kinyoun, before an Association of Surgeons of the Southern Railway Company, in which Dr. Kinyoun explained the manner of using formaldehyde. The Committee said: "The work of disinfection with formaldehyde can not be left to inexperienced or untrained men. Whenever it is performed by using the formaldehyde gas, it becomes necessary that a trained expert has charge of the work and in mixing the solutions necessary for it to be used as a germicide requires care and experience. There is no doubt but what the chief surgeon of the road might, in a reasonable length of time, educate a good and bright foreman of the cleaning department to that extent, that his work would be fairly reliable; yet, in times of epidemics, when car service was running through an infected section of the country, it would be necessary for a thorough-going expert to take charge of this work. I have had no experience with the use of formaldehyde gas as a disinfectant, but have been cognizant of several failures to do good work by reason of the inexperience of the would-be operators. For more than two years I have used the solution of formaldehyde in surgical work, and consider it far superior to any of the germicides which have yet been brought to the notice of the surgeon. Its power to prevent suppuration, or to lessen its destructive influence where pus was present has been wonderful in its results, and very gratifying to the patients."

The report closed by referring to the work of the Master Car Painters' Association, which held its twenty-eighth annual meeting at Old Point Comfort, Va., Sept. 8 and 10, 1897. The Committee said: "Members of the American Public Health Association as well as of the Railway Surgeons' Association will remember that the writer has always advocated a union of work and an interchange of ideas between the practical mechanic and the sanitarian; and I am very glad to extend a most hearty welcome to these co-workers in sanitary science, and bid them God speed in their endeavor to effect a reform in railway sanitation; for whenever work of this kind is being pushed forward by a demand for reform on the part of the public and has the approval of the constructive mechanic, the power is one of irresistible force, and grand results must naturally follow."

The report gave liberal quotations from the papers and discussions of this convention of mechanics, giving the rules and regulations for cleaning passenger cars at terminals adopted by the Cleveland, Cincinnati, Chicago and St. Louis Railroad. There were thirteen of these rules and regulations, which are too long for a mere abstract of the report. In discussing these rules and regulations the Committee said: "They may be the best and most effective that are possible to be enforced by men who are uneducated in the scientific principles of sanitation; and, of course, they can be amended whenever the advanced education of the train and shop men demand a more effective hygienic service.

"Thus far, nothing strictly of an automatic character has been devised to regulate the heating and ventilating of cars and produce first-class results. As yet these seem to be unsolved problems, and any one who has occasion to investigate these questions is ready to admit that they present some perplexing points that are of great interest, yet are entirely outside the domain of questions pertaining to the hygiene and ventilation of ordinary dwellings and dormitories. The fact that a car is a house on wheels, sometimes standing still and at other times moving at a rate of from ten to seventy-five or even more miles an hour, presents obstacles to be overcome in the matter of lighting and ventilation that never have been solved by architects or others having to do with the introduction of heat, light and ventilation in ordinary dwellings. The ventilating and heating of cars running into the north and east must go hand in hand for at least eight months in the year. The sanitarian can easily point out some of the defects, and possibly suggest some ideas that will be of assistance to the practical mechanic in overcoming difficulties in the ventilating and heating of a railway train; but I suppose it will be a long time before any of us will make our fortunes in solving these problems alone, and thereby be deserving of the gratitude of the traveling public.

"However, the great work is slowly going on, and we can well afford to abide our time. As an Association we may without egotism congratulate ourselves that we have been the means of introducing by our educational work the beginning of a great reform in car sanitation, and having enlisted the public, the press, the mechanic and a legislature, we may feel that the work is well begun, and will continue to go on steadily attracting increased force in its onward career."

(To be continued.)

[1] Quotations from the report to the Massachusetts Legislature.

WRITE TO US for a copy of Department of Public Health Bill.

PRACTICAL NOTES.

Acute Intestinal Obstruction.—McArdle (*Dublin Journal of Medical Science*, Oct. 1, 1897) in concluding a paper on this subject offers the following suggestions in case of difficulty in finding the site of obstruction: 1. Follow the engorged coil of intestines upward and downward until the point of obstruction is reached, or turn out all the intestines. 2. Remove all fluid from Douglas' pouch and the loins, by irrigation with sterile water. 3. Restore the color of the bowel, and establish peristaltic movements by heating with neutral saline solution. The removal of the primary cause of intestinal obstruction is not always followed by relief of the symptoms. 4. Should there be difficulty in returning the intestines, elevate the pelvis in the Trendelenburg position, or if necessary, open and wash out. 5. Before all, and above all these conclusions, the following rule should be observed: "When a surgeon is called to a case of complete obstruction of the bowel, with evidence of peritoneal effusion, it is his duty to operate at once."

Diagnostic Importance of the Amount of Chlorids in the Urine.—In chronic affections it seems to be definitely established that progressive or abrupt diminution of the chlorids in the urine indicates a serious phase of the disease, when it is not due to special alimentation. Fieux contributes to the *Arch. Clin. de Bordeaux*, September, a study of the chlorids in the urine of pregnant women, concluding with the statement that the passage of chlorids into the urine is in direct proportion to the permeability of the renal filter for toxic products, and hence, in normal pregnancy or with slight albuminuria the amount of chlorids is always large, averaging 15 grams and never less than 12 grams in twenty-four hours. But if the albuminuria is complicated with vomiting, vertigo, etc., the amount of chlorids is materially diminished, and evidently in parallel proportion to the degree of intoxication. Antouchevitch having observed that the vomiting of pregnancy resembled the symptoms of animals deprived of salt administered salines in large quantities and obtained a prompt, complete and permanent cure. He reported at Moscow that his usual combination is Botkine's saline mixture, phosphate of lime, Glauber salts and bromids.

Removal of a Retro-bulbar Tumor with Preservation of the Eye.—Weiss (*Wiener Medizinische Wochenschr.*, 1897, No. 42, p. 1958) reports the case of a child, a year old, whose parents had noticed increased size of one eye shortly after birth. The eye was pushed not only forward but also toward the median line. Operation was undertaken, a curved incision being made through the skin above the outer portion of the orbital margin, which was resected and turned outward. A bluish, translucent cyst came into view. In the endeavor to free the wall of the cyst this ruptured and it was seen that it continued far into the orbit in the form of a tube. In consequence of the free hemorrhage the operation was interrupted, to be resumed two days later. The remainder of the cyst, which extended into the optic foramen, was dissected free and divided, leaving some doubt as to whether the whole of the growth had been removed. The wall of the orbit was now replaced and the wound closed. Recovery took place without complication. The exophthalmus disappeared. Ophthalmoscopic examination disclosed a pale papilla.

The Treatment of Hydrocele by the insertion of sterilized catgut within the tunica vaginalis. Van Schaick (*Medical Record*, Oct. 30, 1897, p. 624) reports a group of ten cases of hydrocele treated successfully by the following method: After thorough disinfection the scrotum is tapped with a small trocar in order to secure a rather slow evacuation of the fluid. A catgut ligature of medium size is introduced within the cannula as soon as the serum begins to flow and is rapidly pushed within the tunica through the cannula until about eight inches is passed through it. When all of the liquid is evacuated the cannula is removed and the catgut hanging out of the puncture is snipped off with the scissors as close as possible to the scrotum. By manipulation of the scrotum complete entrance of the catgut within the tunica is secured. The wound is then sealed with collodion. If the asepsis has been perfect there is no possibility of the occurrence of any infection. The rather nauseating pain that sometimes occurs after iodin injections is commonly absent. No febrile action takes place.

Benzosol in Phthisis.—This drug was used in a number of cases of tubercular disease in the Cincinnati Hospital, during the summer and fall of 1896, in the service of Drs. Geo. Fackler and E. W. Mitchell. The gastro-intestinal symptoms were markedly changed for the better; and in this way by limiting vomiting, by lessening the number of stools, the changing the character of the stool from watery to a rather firm consistency, the lives of a number of patients were prolonged; not only this rather doubtful benefit, but the relief afforded by checking the diarrhea, made them more hopeful of the future and banished their mental depression. In the two cases in which a fatal termination supervened, the abolition of diarrhea was the most striking result of the treatment; the stools diminished from six or eight per diem, to one or two. It is but fair to say that these fatal cases had well-marked signs of cavity formation when the treatment was instituted. Two cases of the incipient form of phthisis, who were reported "discharged well," had entered the hospital complaining of diarrhea, and made no mention of any pulmonary trouble. The experience, then, would only go to confirm what is being reported by others, that benzosol is an intestinal antiseptic, and that the good results obtained in phthisis are due mostly to its beneficent action on the gastro-intestinal tract. Benzosol is a benzoate of guaiacol, and it is probably due to the presence of the latter, that such good results were expected of it in the treatment of tuberculosis. It is best given in from five to ten grain doses, three times a day, a quarter of an hour after meals.—*American Therapist.*

A Simple Method to Obtain Separately the Urine from Both Kidneys.—To obviate the dangers attending catheterization of the ureters and other procedures for determining the character of the secretion from each kidney, Neumann (*Deutsche Med. Woch.*, 1897, No. 43, p. 690) has devised an instrument by which the bladder, especially in women, is devided into equal portions, and the urine discharged into each finds its way out of the ureter through separate channels. This appliance consists in a tube of thin metal 4 cm. long, 1 cm. thick, carrying within its lumen a solid septum extending 4 cm. beyond the proximal extremity and thus forming a partition within the bladder and the ureter 8 cm. long. The divisions formed in the bladder terminate at the distal extremity of the tube in two smaller tubes, to which test-tubes can be attached and the secretion from each kidney collected separately. The free proximal extremity of the septum terminates in a blunt point, from which pass off to either side two fine curved wires. The tube and its prolongation are curved after the fashion of Hegar's cervix-dilators, so that the instrument adapts itself readily to the posterior aspect of the symphysis pubis. In the employment of the device the patient sits at the edge of the bed, with the feet supported and the thighs spread far apart. The conical proximal extremity of the instrument is introduced into the ureter with its convex aspect forward. The urine present in the bladder escapes. The viscus is then irrigated with warm boric acid solution and all fluid is removed with the aid of a finger introduced into the vagina. The urine, as it is discharged from either ureter, now collects in the bladder on either side of the artificial septum and is eventually discharged through the small tubes.

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SATURDAY, NOVEMBER 13, 1897.

THE LATE LEPROSY CONGRESS.

The recent International Conference on Leprosy at Berlin does not, so far as reports have been obtained, appear to have developed anything specially sensational, either in its discussions or its findings or resolutions, as perhaps might have been expected to be the case. The conclusions as to the hopelessness of treatment, the recognition of Hansen's bacillus as the cause of the disorder and its non-hereditary character are not startling in any sense; the temperately expressed opinions as to the spread of the disease and the necessity of isolation that seem to have been offered are also in the same line of moderation, and the further rejection of the proposition to establish a permanent international commission on leprosy may also probably be accepted as another indication of the same non-alarmist tendency. There was evidently a considerable degree of individual difference of opinion on certain points, but the general tone of the convention, judging from its utterances as given in the press, was opposed to the excitement of any general alarm on the part of the public as to the possible dangers from this disease, at least as far as the principal civilized countries are concerned. One thing, however, was brought out clearly, viz., that the leprosy-producing organism is extremely abundant in the disease, according to some accounts even pervading the atmosphere around the infected individuals, and yet that there seems to be, in temperate climates at least, an almost universal insusceptibility to the contagion. We say "almost universal," for the conclusions that the disease is not hereditary and the occurrence of leprous foci in Norway, Nova Scotia and elsewhere in temperate climates, must necessarily imply the existence of susceptibility to contagion outside of tropical regions. Just what constitutes this susceptibility does not appear to have been settled by the Congress, but it appears to have been considered as exceptional, and possibly as due to some special conditions of health in the individuals exposed. Against this common immunity we have the fact of the almost infinite opportunities of contagion in the abundance and the diffusion of the bacilli from any source of infection, and taking both facts into account, it would seem reasonable to use precautions against the disease. Even if absolute isolation be unnecessary in this climate, the free association of lepers with the public and their mixing with crowds in cities and in public assemblages is decidedly undesirable. The fact that by isolation the number of lepers in Norway has been reduced very decidedly is evidence of this, and the decision of the Congress that isolation is desirable, and that the Norwegian system is to be recommended, is only what ought to have been expected, and can not be deemed in any way an extreme expression of opinion. The view held and expressed by some dermatologists that leprosy is non-contagious in this climate, and that there is no danger or impropriety in its victims going freely about and being treated with other diseases in hospitals, is hardly supported by the facts here developed. There may be some difference in the degree of contagiousness of the anesthetic and the tubercular forms, but in the latter especially it would seem that precautions against contagion are desirable. The long and variable period of latency of the infection is another point of importance; one can not say with certainty whether he is or is not infected, and it may be within the possibilities that an infection obtained in temperate regions where it remained entirely latent might develop into the complete disease on a later residence in the tropics.

Another fact that seems to have been discussed and admitted in the Congress was the possibility of forms of leprosy existing among us unrecognized; many of the cases of syringomyelia that are reported are, for example, to be looked upon as suspicious, and the same is true of Morvan's disease, in which in Brittany the presence of Hansen's bacillus has been determined by one or more observers. The bacteriologic identification of syringomyelia with leprosy is not so definite, but we have at least one reported observation, that of PESTANA and BETTANCOURT, of the finding in it of the lepra bacillus. It is not impossible that there are other as yet unrecognized modified forms of the leprous infection existing among us.

The assertion positively made that the germ of leprosy is found only in the human species is a satisfactory one, since could it be conveyed by the lower animals, the chances of mischief would be multiplied.

We can satisfy our egoistic and philozoic tendencies together with such facts as this.

It is evident that there are yet many important questions relative to leprosy that are left unsettled by the Congress, among them those of the vitality of the Hansen bacillus, the exact modes of contagion, the reasons for immunity, the exact climatic and dietetic conditions favoring it, etc. The Congress probably acted judiciously in not endorsing any alarmist opinions, while yet advising reasonable precautions against possible contagion and spread of this loathsome disorder.

APLASIA OF THE GALL BLADDER AND THE BILIARY DUCTS.

In 1892 JOHN THOMSON[1] collected all the cases of congenital absence of the gall bladder and the biliary ducts described in the literature, namely, forty-nine, and added a case of his own, making the total number fifty. Recently KR. THUE of Christiania describes a new instance.[2] It concerns a newborn girl, twin birth, the other child being well and living at time of this report. Icterus, present at birth, increased rapidly; the liver enlarged and emaciation progressed, death occurring in two weeks. The postmortem showed an enlarged granular liver of olive-green color, with bands of fibrous tissue ensnaring islands of hepatic tissue. Any gall bladder, biliary ducts or sign of any biliary papilla could not be found. In addition there was a healing pericarditis with a fibrinous exudate. The microscopic examination showed broad bands of fibrous tissue surrounding groups of and also single acini, as well as penetrating into some lobules separating the cells from each other. In the connective tissue were clumps of yellowish-brown pigment and collections of round cells. All the liver cells were yellowish. In the connective tissue were also small ducts lined with a cubical or flattened epithelium, the lumen being filled with yellow clumps. Sections through the fibrous tissue occupying the site of the gall bladder showed no sign of the gall bladder or any part of it. Bacteria were not demonstrable in the organizing pericardial exudate.

The clinical picture of absence of the bile ducts and the gall bladder corresponds to that of retention icterus in general. In the beginning the condition is very apt to be mistaken for an attack of icterus neonatorum. The deep icterus may require from eight to ten days for complete development, because the liver cells do not perform active secretion until some days after birth. Hence the steadily increasing aggravation of the symptoms in case of absence of the biliary passages will be the principal factor in the differential diagnosis of this condition from icterus neonatorum. The average duration of life of the children without biliary passages is about four months; some have lived for eight months, others die a few days after birth.

According to MINOT,[3] the liver is formed from a diverticulum from the intestine, which very soon divides into two. These evaginations consist first of solid columns of cells that afterward separate so that a lumen is produced. The gall bladder is formed from an outgrowth of the right primary diverticulum. Absence of the gall bladder and of the biliary passages may arise from an arrest of development of the originally solid canals or because connective tissue proliferation of inflammatory or other origin gives rise to obliteration of the canals sooner or later after they are formed. LORREE[4] regards syphilis as the most likely cause of these anomalies, perihepatic processes in the porta hepatis leading to obliteration of the passages. JOHN THOMSON[5] regards syphilis as an exceptional cause, inasmuch as in twenty-nine of the fifty cases collected by him nothing is stated pointing to syphilitic infection of the parents. In THUE's case there were no indications of syphilis.

In the majority of cases described there is a history of evacuations of meconium. Now, the greenish black color of meconium is due to biliary coloring matter and hence it becomes necessary to assume with THOMSON that in these cases the biliary passages have been imperfectly formed and the resulting partial retention of bile gives rise to inflammatory changes that end in a complete obliteration without much, if any, traces to indicate the exact genesis of the anomaly.

The secondary changes in the liver in these cases are of considerable interest. These changes are essentially those of a biliary cirrhosis. The points of difference between this form of cirrhosis and the so-called hypotrophic cirrhosis of the French, which must be regarded as a disease *sui generis* due in all probability to some obscure form of infection, need not be discussed in minuteness at this time. By biliary cirrhosis in the strict sense ought to be designated the forms of interstitial proliferation that depend directly on occlusion or obstruction to the outflow of bile. JANOWSKI[6] made a study of biliary cirrhosis and came to the unequivocal conclusion that it is due to obstruction of the bile and that it can be produced experimentally by the ligation of the ductus choledochus. Now, in congenital absence of the biliary passages, nature has, so to speak, made this experiment. As a rule the clinical history in these cases points to a progressive enlargement of the liver. This enlargement is due to the steady increase in the amount of the connective tissue. On account of the increase in the biliary pressure bile capillaries may burst, the bile is infiltrated among the liver cells and its press-

[1] On Congenital Obliteration of the Bile Ducts, Edinburgh, 1892.
[2] Festskrift i Anledning af Prof. H. Heiberg's 25 Aars Jubilaum, Christiania, 1895.
[3] Human Embryology, Boston, 1892.
[4] Virchow's Archiv, Bd. 99, 1885.
[5] Loc. cit.
[6] Ziegler's Beiträge, 1892. Bd. xi, p. 344.

ure on the blood capillaries produces anemia of the liver cells, which in conjunction with the direct action of the bile, leads to necrosis of the hepatic cells, followed by an overgrowth of connective tissue. The necrotic areas act as foreign bodies and induce round cell infiltration and connective tissue proliferation. These changes occur more or less irregularly—at times it surrounds many acini, at other times small remnants of acini are found in the connective tissue, generally it manifests a marked tendency to invade acini from the periphery.

WRITE TO US for a copy of Department of Public Health Bill.

HYSTERIC ACCUSATIONS AND HYPNOTISM.

Hysteric accusations are of perennial interest to physicians, albeit the lawyers occasionally suffer as much from these, and the clergymen even more. Cases of hysteric scandals are exceedingly frequent under the fostering care of the sensation-monger press, and are of late conjoined with crude popular notions of hypnotism, as they were during the hypnotic epidemic of half a century ago in the United States.

Dr. BRIGHAM, of Utica, reported the following case (*American Journal of Insanity*, April 1848): A man was accused, by an hysteric lunatic, of an attempt to murder her. The delusional origin of the accusation was proven by Dr. BRIGHAM, who also recognized the hysteric phase. The patient was hypnotized by a layman "mesmerizer," who did not believe the accusation. Her narration of the story during the hypnotic state varied decidedly from that given in the conscious state. The "mesmerizer," who regarded the woman as a lunatic, testified to these facts. The woman gagged herself, tied herself up, and did analogous hysteric tricks now familiar to neurologists. The accused was acquitted.

This case in certain particulars bears a decided resemblance to the GRACE DARRELL case of Jacksonville, Fla. Two years ago this girl, then at the age of 20, claimed to have been kidnapped, taken to the woods, stripped of part of her clothing and tied to a tree where she was found the next morning. Four young men were charged with the crime, arrested and convicted, but a new trial was granted. The young men were afterward tried in the United States court, charged with sending improper letters to Miss DARRELL.

The prisoners were convicted but again the court set aside the decision. Recently Miss DARRELL made a sworn confession that her testimony was false and that the letters were written by her guardian and others for the purpose of convicting the young men. When this confession become known she was taken to the newspaper offices by the guardian, and there denied ever having made it. She was brought into court and again denied having made the confession, despite the fact that it was witnessed by four prominent and trustworthy citizens. The guardian was present when these denials were made. Miss DARRELL escaping from the guardian's residence, declared the confessions were absolutely true. She says her guardian has a Svengali-like influence over her, and that she is powerless to do otherwise than he tells her to do. To the features of ordinary hysteric accusations, this case adds a by no means improbable charge of suggestion, but this suggestion is not greater and no more criminal than that made to ordinary hysterics by well-meaning but credulous sensationalists, when an hysteric accusation is once started.

Hysterics have far from infrequently indulged in letter-writing performances similar to those of the DARRELL case. This occurred in the following (*Alienist and Neurologist*, Vol. 16): A milliner complained that her store had been fired several times, and that obscene letters had been sent her. She confessed later that she set fire to the store and wrote the letters. She implicated a young man and stated she had been his mistress. He was arrested but she failed to prove her charge against him and he was released. She was then indicted for perjury. In her confession read at the trial she said that she fired her store in order to get money to go to New York and find the young man with whom she was infatuated. Drs. WILLIAM A. HULSE and FURMAN NICOLL testified that the defendant had suffered from hysteria and temporary insanity resulting from dysmenorrhea. Dr. L. C. GRAY testified that under the right and wrong knowledge test of the New York code, she was not insane. The jury acquitted her in clear defiance of the code on the ground of insanity.

LEGRAND DU SAULLE ("Les Hystériques") describes cases where women formed the delusion that they had been struck or stabbed by others after having inflicted blows and wounds upon themselves. In one instance a young woman was found by her husband lying on the floor of her room in a fainting fit, her face covered with blood. She stated that she had been attacked by armed men. The Paris newspapers related the case and within three weeks two similar events occurred in the French metropolis. All these cases proved to be fabricated by the supposed victims. A young girl wounded herself slightly with a pistol. She gave the police authorities the most minute details about an imaginary assassin who, according to her account, fired the shot, but she was found to be highly hysteric, and it was proved that she had wilfully wounded herself. In a third case (in Dr. DU SAULLE'S experience) a young woman was found, in a railroad carriage, stabbed in the left side. The incident caused great excitement, but it was proved, contrary to her assertions, that she had inflicted the

wounds herself and was a hysteric subject. A housemaid was found lying behind a door bound, gagged and covered with bruises. She stated that she had been brutally attacked by two burglars with blackened faces, but she was a highly hysteric woman and there was conclusive evidence that she had contrived to tie her own hands and gag and bruise herself.

TARDIEU cites the case of a woman of Courbevoie who wished to pose as a victim of political conspiracy which she pretended to have discovered. One night she was found at the door of her apartment in a state of great mental perturbation. She could not talk, but stated in writing that she had been attacked outside her own house by a man, who attempted to garrote her, at the same time striking her twice with the dagger. Only the clothing was injured, the body of her dress and her corsets being cut through but at different levels. She tried to make out that the attempt at strangulation had caused dumbness. TARDIEU remarked in her hearing that this infirmity rapidly disappeared when produced under circumstances of this kind. She soon managed to regain her speech and in a short time admitted that the whole narrative had been evolved out of her inner consciousness.

In a case reported by LEGRAND DU SAULLE, an hysteric female sent five persons to Cayenne (the French penal settlement) on a charge of rape. A member of the French Medico-Psychological Association suspected, from an after-examination of the alleged victim, that the whole story was of hysteric origin. Through his efforts the innocence of the prisoners was demonstrated and they were released.

TOULMOUCHE has reported the case of a young girl given to devotional exercises and much inclined to flagellation and asceticism. She one day cut herself six hundred times on various parts of the body, with scissors. She asserted these wounds were made by a man who tried to outrage her. She finally confessed that the injuries were self-inflicted. HUCHARD has had under observation an 18 year old girl who accused the vicar of the parish of having raped her. She stated that one day, while she was praying in the church, the vicar shut all the doors and requested her to go with him into the sacristy. There (she claims) he made obscene proposals to her and, as she indignantly refused, he pointed a dagger at her, she fainted, and during the faint he (she alleged) violated her. She was questioned during the trial. Her replies to the questions of the medical expert exciting suspicion an examination was ordered (by the court) which revealed that she was still a virgin.

TARDIEU has reported the case of an inmate of a Gascony convent who claimed to have been made the victim of all sorts of outrages therein. Her father, with full faith in what she said, denounced the alleged criminals. Finding, however, that his daughter's story was untrue, he took his life. In another case cited by TARDIEU, a girl charged two young men with having violated her and introduced into her rectum and vagina, stones, splinters and iron, which had to be extracted with great pain. She had convulsive seizures, followed by paralysis. The two men were convicted and had been imprisoned for more than a year when the false nature of the accusation was discovered.

The psychologic *raison d'être* of these accusations has been carefully pointed out by DESCHAMP'S (*Bulletin général de Thérapeutique*, 1891). The The general mental characteristics of hysteria are, he remarks, an absolute want of equilibrium in sensibilities and will power. There exists a mobility of humor in direct relation with facial impressionability to external influence (external ideas or perceptions) or to internal states (intrinsic ideas). The nerves vibrate to all sentiments, coming from within or without, which are registered without proper relations. One fact chased by another is forgotten. Another produces a momentary hyperexcitation which takes the place of truth, whence it is that falsehood is instinctive, but the patient protests her good faith if accused of the same. This lack of equilibrium leads to decided modification of the mental faculties. Intellectual activity is overexcited, but in diverse degrees and in variable ways, according to the particular tendencies adopted. Absorbed by a preoccupation or controlled by an idea, they become indifferent to all else. Their ideas are abundant and they rapidly pass from the idea to the act. Their vivid imagination, coupled with a bright intelligence, gives them a seductive aspect, but their judgment is singularly limited, attenuated or false. They judge excellently from a non-personal standpoint. They are quick at discovering faults, even of their own relatives, but faults attributed to themselves are repudiated. Their memory is capricious. They forget their faults and their acts done under impulse, albeit these may be consciously done. They frequently make charges of immoral conduct against both men and women, often with a desire of securing notoriety, often, as SPITZKA ("Manual of Insanity") remarks, with the object of indicating their own desires, and equally often from a voluptuous enjoyment of the suffering caused by the accusation. The responsibility for these is legally doubtful. They are often at first vague and indefinite, but are given form by the suggestion of others honestly desirous of punishing a supposed wrong. In all accusations by neurotics, this delusional factor must be taken into account legally, both for the benefit of the individual and of society.

WRITE TO US for a copy of Department of Public Health Bill.

CORRESPONDENCE.

Observations on the "Code."

NEW YORK, Oct. 31, 1897.

To the Editor:—The "Code" is noble, a law irrevocable, supreme wherever the doctor wends his way, ruling an army of learned and cultured men. Its genesis is lost in antiquity. It is noble, but not more so than the unified profession whose ethics it formulates, failing only in so far as those whom it would govern are human, and to be human is to fail as well as to succeed. The "Sermon on the Mount" has been attacked, so has the Code. It has been said that a gentleman requires no "rule of conduct;" true, but all are not gentlemen, and so there is need for the rule of ethics as there is need for the "Sermon;" neither will be too old until the time has come when every man does unto his neighbor as he would be done by. However, it is not our purpose to defend; it is not necessary.

Those who as yet are breasting the current, struggling where the rocks are jagged, where the eddies swirl, fain to reach the placid waters beyond, the status of the successful practitioner of merits proved with laurels won; these are the ones who find it most difficult to correlate conduct with the exactions of the "Code."

When one by one the rungs of the ladder of fame have been courageously reached and passed, and there is an infinity between the first and the last, then it is that the individual is best adapted to the "Code." Now, a position is occupied so lofty as to be everywhere easily observed. A chance misstep and the labor of years is all for naught; and again, one now comes to love the "Code," to realize its justice, to acknowledge the verity of the principles on which it is founded. These things hold such an one in loyal and constant obedience to the ethics of "our profession."

But in what manner do its provisions apply to those for whom the top of the ladder is yet a weary climb? They more frequently fail, and the reasons are manifold. Entering on the practice of a profession already overcrowded, finding competition keen and uncharitable in the struggle for sustenance, they see apparently well-founded cause for sometimes disregarding the mandates of a Code which, did they but know, would prove their best, most steadfast friend. In these days of newer economics and rapidly changing ideas, it is difficult to get the younger men to properly regard principles of conduct which some are pleased to term "idealistic" and "not applicable to the times." They forget that the "Code" was made for one and all, makes the weak the equal of the strong, eliminates mediocre competition, is the crystallized wisdom of the army that has gone before; that it never grows old, for, like the drama of Shakspeare, it is founded upon a truthful interpretation of human nature, in which there is little change from Galen's time till now. Even those most prone to break the rule can not but acknowledge its high place.

Our profession is everywhere banded into groups whose object and duty it is to have a proper regard for the general welfare, and to enforce the principles which we know are for the good of all. If an erring brother filches from you your purse, or what means the same, illegitimately deprives you of a patient, do not overlook the action, grow cynical, sneer at the "Code," but rather place the circumstances before the properly constituted society. Then the erring brother will be called upon to walk the "straight and narrow path," and if he chooses not to do so will be branded for what he is. Patient endurance under such circumstances makes he who endures a party to a course of action which, if prevalent, would undermine the very foundations of the profession. So take heed; for upon you who have the way before you much is depending, and let it not again be said that four young physicians of New York City successively bid for an expected *accouchement*, the fourth and successful bidder agreeing to take the case for $5.

E. S. B.

Homeopathy vs. Rational Practice.

LA PORTE, IND., Oct. 22, 1897.

To the Editor:—Yesterday I received from my publishers, the W. T. Keener Company, the JOURNAL for September 25, on pp. 661-2 of which is notice of my little book "Principles of Medicine." Will you permit me to correct the erroneous impression which the closing words of that notice are likely to have made upon your readers? The writer quotes me as follows: "'It is perfectly well known that a very large majority of us homeopathists do not repudiate practices which we think useful, although they are not instances of homeopathy.'" The quotation is (substantially) correct, but his interpretation of it is misleading when he continues: "In other words, according to our author, whatever he is satisfied cures the patient is homeopathy." Look again at his quotation from me: We "do not repudiate practices which we think useful, *although they are not instances of homeopathy.*" Does that bear the interpretation that he has put upon it?

I have great confidence in the utility of so defining the cure sought in any given practice of homeopathy as to distinguish that cure from any sought in rational practice, and in the utility of discussing homeopathy as a matter *of opinion*.

Very sincerely, CHAS. L. MACK, M.D.

A Misrepresentation.

CHICAGO, Nov. 8, 1897.

To the Editor:—In *Leaves of Healing*, dated Oct. 30, 1897, edited by Mr. J. A. Dowie, copies of which have been liberally distributed to Chicago physicians and others, appears the following in the guise of an alleged quotation from a paper read by myself to the Sunset Club:

"The doctors of Chicago are divisible into three classes, the first are liars, the second are damned liars, and the third are experts and they are the biggest liars of all."

At the meeting of the Sunset Club March 1, 1894, I read a paper on "Expert Testimony," in which occurs the following passage (official report, p. 3): "But closer familiarity with the practical workings of the system reveals a still more serious flaw, one which has given rise to the time-honored epigram that witnesses may be divided into three classes: liars, damned liars and experts. Instances of deliberate lying by expert witnesses are not unknown; our real estate friends furnish especially brilliant examples."

A comparison of these two quotations renders comment unnecessary.

WILLIAM T. BELFIELD, M.D.

Edema Universalis(?)—Varia.

DETROIT, MICH., Nov. 5, 1897.

To the Editor:—A year or so ago I was called to see a baby three months old having pronounced edema of the extremities, anasarca of the scrotum and a general puffiness of the eyelids, face, etc. The urine on chemic and microscopic examination showed no abnormality to account for the affection. Heart and lungs normal.

Recently Dr. Steinbrecher of this city, in his regular family practice, saw a somewhat similar case, save that there was no anasarca of the scrotum. Heart and kidneys were normal in this case also.

In the literature at my command, containing the most recent and voluminous reference works, I fail to find a description of a similar condition and would therefore ask you whether or not I am justified in calling it edema universalis?

I approve of your continued efforts to establish a department of health. Such an organization would put the medical profession at once on a higher scale, at least so far as the respect from the people is concerned. It would also lead to a uniformity of health laws for each State and Territory of the United States and possibly also uniformity in the licensing of

physicians, so that one examination should entitle an M.D. to practice throughout the union.

I could in addition to this say a good many flattering things for the JOURNAL, having seen it improve and progress since my arrival in this country, but shall not do so at present save that I wish to sustain you in your position in regard to the newer orthography.

When in Germany some time ago a new orthography was submitted to the Secretary of Education, the number of opponents was immense. But today, in spite of them, German is written more rationally—such words as *todt* being spelled *tot; roth, rot; muth, mut;* etc.

In this connection I wish to say that in my humble opinion we affix our title M. D. to the wrong side of our names. The old Austrian style of putting the abbreviations "Med. Dr." before our names seems to me the correct one, and unless you object to it would like to see my signature put that way.

Respectfully, MED. DR. GUSTAVUS M. BLECH.

The Cure for Dipsomania?

MIDLAND, TEX., NOV. 4, 1897.

To the Editor:—Will you be kind enough to inform me how I can procure the formula for the so-called "tonic" that is used by parties in giving the "whisky treatment?" Can you refer me to any issue of the JOURNAL or other medical publication containing it? W. K. CURTIS, M.D.

PUBLIC HEALTH.

A Preliminary Course of Training for Ship Doctors is being organized at Hamburg which will be required of applicants in future. Italy requires proof of a certain knowledge of hygiene and two years' practice, and in France applicants have to pass a special examination in epidemiology and sanitation.

A Possible Explanation.—Beri-beri is said to be particularly prevalent in the Dutch Indies. Dr. Eykmann made an important discovery in the prison of Sourbaya. While on July 1, 1896, 99 prisoners out of 800 had been caught by the disease, this ratio fell gradually from 84 to 13 during the next month when the prisoners received Sumatra rice instead of Saigun rice.

A Pernicious Fever, presumed to be of malarial origin and said to be more deadly than cholera, is ravaging Fashkand, a city in Central Asia, situated in a fertile plain. Numerous gardens and vineyards are interspersed among the mud-built and reed-thatched houses. The fever has raged there for four years and leaves the survivors unfit for work. The disease is spreading throughout Russian Turkestan and Merv.

Sanatoria for Consumptives.—Professor Leyden considers it the duty of society to provide sanitoria where patients can be sent in the early stages and restored cured to their families. One-third are cured and one-third show marked improvement in the sanatoria already established and it is merely a question of increasing the number and bringing them within the reach of the middle and lower classes. He states that the fact is established that pure air is the chief essential and that this can be obtained in the country where the patient habitually resides, disproving the necessity of sending him to a distance and avoiding the dangers of a return from a warm to a colder climate. The King of Sweden has given the 2,200,000 kroner presented to him on his twenty-fifth jubilee to found sanatoria for phthisics in Sweden.

Prophylactic Hygienic Measures in Barber Shops.—The Paris authorities have distributed a circular among the barbers and hair dressers of that city containing directions for disinfecting their instruments, etc. It recommends that metal combs be substituted for ivory, etc., and that they should be immersed in boiling soapy water immediately after being used, while the razors, brushes, scissors, etc., should be placed for half an hour in an oven heated to 100 degrees C. or in an air-tight box over a solution of 50 grams of formic aldehyde and 200 grams of salt. Rice powder should be applied with a dry spray or bellows. The hands should be washed with soap before passing to another client and the floor sprinkled with moist sand when cutting hair, which should be swept up at once and all burned together at the close of the day.—*Revue Médicale*, October 20.

Value of Street Sweepings, Garbage and Sewage.—The Secretary of Agriculture has authorized an investigation of the extent of the use of these materials as fertilizers in this country, the results that have attended their use and the best method of applying them to the soil. It is a well-established fact that where sewage must be turned into a stream it is better that it first be allowed to percolate through a layer of soil, the soil being either a specially prepared filter bed or only an ordinary farm, with or without underdrainage. Opinions as to the extent of the danger of disseminating pathogenic organisms among men and animals by the use of sewage for the irrigation of field and garden crops will be of value to the Department. Knowledge of any evidence of the spreading of diseases in this manner and date concerning published reports of such may be forwarded to H. W. Riley, U. S. Department of Agriculture, Division of Chemistry, Washington, D. C.

A New Sanitarium for Incurables in New York.—Buildings are being erected in Forestburg, N. Y., by the Sisters of St. Dominick to be used as a sanitarium during the summer season for patients from St. Catherine's Hospital, Williamsburg, Long Island, and as a permanent home for incurables. The site is 1,947 feet above the sea level. Patients in the first and second stages of phthisis will be received in order that they may have the benefit of the high altitude. The estate covers an area of 1,173 acres and the various buildings are separated from each other by a distance of from 1,000 to 3,000 feet. The architecture is of medieval monastic style and the buildings will be provided with all modern improvements, heated by steam aad lighted by electricity. When completed the establishment will be the largest of its kind in the United States.—*Medical News*, October 23.

An Antitoxin Circular of a State Board of Health.—The Massachusetts State Board of Health has found it necessary to remind physicians of the reciprocal duties they are expected to perform in return for the furnishing of antitoxin facilities for the bacteriologic diagnosis of diphtheria, etc., by that body. In a circular recently issued they are reminded that the antitoxin is furnished gratuitously, to be used in the cases of persons unable to pay for it, and on condition that a description of the case and the effect of the remedy be furnished the Board of Health in return. The State Board of Health will withhold future supplies of antitoxin from local boards which fail to secure compliance with this rule. Care in the storage and distribution of antitoxin are also enjoined upon the local board, and instructions in the use of the diphtheria culture tubes are given. With regard to the examination of sputum, the State Board will receive for examination only specimens forwarded in the receptacles furnished by the board. Leaky receptacles endanger all persons who handle them. Material sent by mail will be rejected. Cover-glasses for the examination of blood with reference to malarial infection, with instructions for their use, will be sent on application, to any part of the State. Examinations of cultures, sputum, etc., will be made gratuitously by the Board's pathologist, if the conditions of transmission are complied with, and not otherwise.

New Argentine Law in Regard to the Sale of Medicines.—The Congress of the Argentine Republic is expected to pass a law creating a national board of health (or Department of Public

Health, as it is called officially). The law will become effective in a short time. This board of health will have complete control as to what medicines or compounds shall be allowed upon the Argentine market, as will appear from the following two articles of the law:

Article 36.—It shall be lawful to sell or to expose for sale in any pharmacy or apothecary's shop or store such specialties or compounds only whose component parts are clearly specified upon a visible part of the package thereof, setting forth also the doses of the active substances contained therein.

Article 37.—The Department of Public Health will authorize the sale of the medicines referred to in Article 36, when the requirea conditions have been fulfilled, without which authorization such goods can not be offered for sale.

Failure to comply with the requirements of these two articles will be punished by a fine of from $100 to $200.

It will therefore become necessary for American manufacturers exporting medicinal compounds and specifics to the Argentine Republic to obtain the required permit from the Department of Public Health and to state the composition of the medicine on each package. Full information concerning the further requirements for securing the above permit will be supplied upon application to the editors of this paper.—*Scientific American*, October 30.

The Tracadie Lazaretto.—The Canadian lazaretto in Tracadie, Gloucester County, N. B., is finely located. It is on the shores of the Tracadie River, overlooking the Bay of Chaleur, which is part of the Gulf of St. Lawrence. It is very different from the pestiferous island of Molokai or the open sepulchres about Jerusalem in which the Scriptural lepers had their abodes. But circumstances were not always so favorable for the poor lepers at Tracadie as now. At that time the lazaretto was so badly kept that the lepers tried to remain in concealment among their own families as long as possible. On being discovered they were lassoed and dragged or driven with long poles to the lazaretto, where men and women were indiscriminately herded together. The lepers' food was placed on the ground, and they helped themselves to it as best they could. One of the Sisterhood of the Hotel Dieu, in Montreal, heard of the pitiable condition of the Tracadie lepers, and volunteered to start a mission among them. She induced the government to build a new lazaretto, and she was placed in charge of it, having several other sisters under her. The lazaretto is a fairly commodious building, partly of logs and partly of planks, and, while hardly conforming to our idea of what a government building for this purpose should be, it is kept scrupulously clean, while the inmates are well fed and well cared for. There is a small farm which the lepers cultivate, and they also own boats, from which they fish. Tracadie itself is a small settlement of log huts. The population is chiefly French Canadian, and the families are large and badly crowded. Various stories are told of the origin of the disease in Tracadie. One says that 140 years ago a Syrian bark was wrecked near that place, and some of the crew, who were affected with leprosy, remained in Tracadie and married there—G. H. Fox, M.D.

Yellow Fever.—The anticipated betterment of the yellow fever condition from the cold wave prevalent in the fever district, at the closing of our last report, was tardy. The dispatches are as follows: November 3, New Orleans, 5 deaths and 39 new cases; Montgomery, Ala., 1 death and 7 new cases; Memphis, 1 death. November 4, New Orleans, 7 deaths and 40 new cases; Mobile, 1 death and 11 new cases; Edwards, Miss., 2 new cases; Nittayuma, 1 new case; Bay St. Louis, 5 new cases; Montgomery, 1 death and 2 new cases; Biloxi, 6 new cases; Scranton, 2 new cases; Memphis, 1 death and 3 new cases. November 5, New Orleans, 10 deaths and 31 new cases; Cayuga, Miss., 1 new case; Memphis, 1 new case; Mobile, 1 death and 11 new cases; Montgomery, 1 death and 2 new cases; Whistler, Ala., 2 deaths. On November 4, Dr. Olliphant, President of the Louisiana State Board of Health, promulgated the following order, to take effect immediately: Quarantine against all points is raised, except that passengers from Mobile, Montgomery and coast points coming to New Orleans will be required to have certificates from health officers or from reputable physicians, that for ten days past there has been no yellow fever in house where such passengers have resided. And it will further be required that all baggage and household effects from these points be disinfected at the Rigolets station under supervision of quarantine officers. The Mayor of Birmingham, Ala., also raised quarantine against all yellow fever infected points, and on November 5, the Southern Pacific Railroad Co. reopened their "Sunset Route" for through business to New Orleans. November 6, New Orleans, 5 deaths, 23 new cases; Memphis, 1 new case; Mobile, 1 death, 5 new cases; Montgomery, Ala., 3 new cases. November 7, New Orleans, 7 deaths, no report as to new cases. November 8, New Orleans, 7 deaths, 14 new cases; Mobile, 2 deaths, 4 new cases.

An Epdemic of Cerebrospinal Meningitis.—Francis H. Williams, M.D., reports briefly concerning his experience at the Boston City Hospital with an epidemic of cerebrospinal meningitis during last winter and spring. The first case entered the hospital Dec. 30, 1896. The records of the hospital from 1880 to Dec. 30, 1896, include thirty-nine cases, with a mortality of 59 per cent. From the latter date to June 1 there have been forty-seven cases, forty-two of which entered in March, April and May; that is to say, during the past five months there have been more patients with this disease in the hospital than in the previous seventeen years. The tabulation of these forty-seven cases by localities, shows that one part of the city has not been more affected than another. The patients have been youths and adults; and the form of the disease has been very severe. It has been characterized by sudden onset, with an average duration of about thirteen days in the fatal cases, and the very high mortality in the forty-seven, the whole number of cases, of a little over 72 per cent. The prominent symptoms have been intense headache, delirium, a stiffness of the muscles of the back of the neck, retraction and stupor; in some cases there have been diplopia, strabismus, deafness and vomiting; in eleven cases herpes labialis; in seven cases some form of eruption, but this does not justify the name of spotted fever, which is sometimes given to this disease. In twelve cases a blood count was made and in most of these there was leucocytosis. The serum test for typhoid fever was tried in eight cases and found to be negative in all. Lumbar puncture was done in thirty-two cases, and judging from these this puncture does no harm and it readily establishes the diagnosis when fluid containing pus and organisms is found. "In the seven cases in which I performed the operation it yielded a positive result in all. The operation, under strict antiseptic precautions, is readily done by using a small trocar to tap the sac surrounding the spinal cord and draw off some of the fluid; the point of insertion is between the third and fourth lumbar vertebræ. I have usually chosen a point slightly lower than the lowest part of the spinous process of the second lumbar vertebra and one inch outside of it, and inserted a small-sized trocar, somewhat downward and inward, to a depth of rather more than two inches. I have always used a trocar instead of a needle, as the latter is liable to be bent or broken off and is too small to allow the thick pus that is present in some cases to flow through it easily. The lumbar puncture is very serviceable for diagnosis, as often there is no history and the symptoms may be few. It may also relieve pressure temporarily. That there is pressure is shown by the fact that the fluid is apt to squirt out at first with some force, and sometimes two ounces may be readily withdrawn. The diagnosis has been established in more than one-half of these forty-seven cases, either by examination of the fluid obtained by lumbar puncture or by autopsy. The present treatment of the disease is wholly unsatisfactory, but the fact that we have the means of making an early diagnosis in many cases, and that the organism is not a robust one and seems to be short-lived in the body, offers the hope that better treatment may soon be found."

Increase of Insanity in England.—A letter in the *American Practitioner and News* contains the following data bearing on the increase of accommodations required for the great City of London:

"During the year 1896 the Asylums Committee of the London County Council was responsible for 13,526 persons of unsound mind as compared with the 10,104 in 1890; or an apparent increase of 33 per cent. in six years. Pending the com-

pletion of a new asylum at Bexley Heath, 600 beds have had to be provided in temporary buildings at Banstead and Colney Hatch, and like accommodation for 400 female patients is in progress at Hanwell. Last month an estate of 1,060 acres was purchased for $200,000, on which a seventh county asylum will be erected for 2,000 beds. The weekly rate for maintenance remains at $2.55 per week per patient, chargeable to parishes and unions in the county. The pathologic laboratory at Claybury is fully equipped, and arrangements have been made whereby clinical instruction can be given to students from four of the London medical schools. The English statistics are not always so kept as to allow very exact inferences to be drawn from them; but we notice that where the effort has been made to sift out the old cases, the increase in new cases is apt to be greater than where the traditional way of reporting 'first admissions,' which may be of persons insane for twenty years, is followed. In the County of London, where only the 'new names' are computed for five years, the actual gain in these first admissions was 711 from January 1892 to January 1896, a gain of 28 per cent. in five years, or much beyond the gain in population. The officials giving these figures, however, wish to make certain allowances (which may or not be required), after which, they say, 'it will be found that occurring insanity has not increased so greatly out of proportion to the population as appears at first sight.' This may very well be true, since no one acquainted with the facts believes that there is a rapid gain in new cases of insanity beyond what the gain in population would require. But there is no other way for accounting for the very steady and now enormous increase of new cases. Thus the proportion of registered insane to population, which was but 18.67 in 10,000 in 1859 (one in every 535), was in 1896, 31.38 in 10,000 (one in every 319). Here there was a large gain in the whole population, though much less than the gain among the insane. But in counties where population has been losing, and in whole countries, like Ireland, where this is so, we still see a gain in the new admissions of the insane. Thus in Nottingham, where the population in ten years (1886 to 1895) fell off more than 6,000, or 2.5 per cent., the yearly insane admissions went up from 100 to about 150. The first requirement for statistic accuracy in this matter, which excites increased interest everywhere, is to compute carefully the first attacks, as distinguished from old or relapsed cases. Until this is done for some considerable area of country, where the population is reasonably permanent, great cities showing a disproportionate increase, for several reasons, the labor of investigation among discordant and incomplete statistics will hardly furnish a basis for inference of any value."

NECROLOGY.

CHARLES M. ROTH, M.D., New York City, October 27, aged 72 years. He was born in Giessen, Hesse-Darmstadt, Germany, and was graduated from the university there in 1852 as Doctor of Philosophy. He came to America in 1860 with the intention of occupying the Chair of Chemistry in Irving College, Manchester, Md., which position he had obtained through his friend and teacher, the celebrated Dr. Just. von Liebig. He attended the lectures at the College of Physicians and Surgeons and received his diploma from that institution in 1866. He contributed many articles on medical science to German and English periodicals, and was a frequent contributor to the *New York Medical Record*. He was recognized as an authority on gynecology, and was a member of the County Medical Association.

Sir RUTHERFORD ALCOCK, K.C.B., D.C.L., F.R.C.S., Nov. 2, aged 80. Sir Rutherford was on the medical staff of the British auxiliary forces in support of Isabella II. against the Carlists and in Portugal in support of Marie II. against the Miguelists. For his services in the peninsula he received honors, and a number of decorations from the English, Spanish and Portuguese governments. In 1844 his government appointed him consul at Foochow. Two years later he held a consulship at Shanghai and in 1858 took the same position at Canton. He was then sent as minister to Japan. He was created K.C.B. in 1862. In 1865 he was transferred to Pekin as chief superintendent of trade in China remaining there until 1870. Some of his books are "Notes on the Medical History of the British Legion in Spain," 1838; "Elements of Japanese Grammar," 1861; "The Capital of Tycoon," 1863, and "Familiar Dialogues in Japanese," in 1878. In 1876 he was president of the Royal Geographical Society, and presided over the health department of the Social Science Congress held in 1882.

M. ROONY, M.D., who died at Quincy, Ill., September 10, (*vide* JOURNAL, p. 660) aged 60 years, was a graduate of the Miami Medical College, 1866, and of the Long Island Medical College, 1874. He practiced in Quincy from 1871 and was physician to St. Mary's Hospital and many other Catholic institutions in that city. He was a member of the Adams County Medical Society and at one time its president. His death was due to perforation of the ileum at the site of a band of adhesion which obstructed the bowel.

CHARLES ANSON FOX, M.D., College of Physicians and Surgeons, New York, 1881, disappeared May 17, 1896, after having gone out for a short walk. His home was in East Hartford, Conn., where he had retired a few years ago owing to mental trouble. On October 31 last his body was found buried in about three inches of leaves in the woods on the road to Bolton, Conn., 300 feet away from the highway and about one mile east of Manchester Green. The clothing and flesh crumbled from the skeleton, but a gold watch, an Odd Fellow's pin and a memorandum book established its identity. There were no indications of suicide or foul play.

JOSEPH EDWIN CULVER, M.D., College Physicians and Surgeons, New York, 1849, who was born at Croton, Conn., Feb. 9, 1823, died at his home in Jersey City, N. J., November 1. He had been treasurer of Hudson City for some length of time, up to the consolidation of the cities mentioned, and was one of the organizers of the Hudson County (N. J.) Medical Society, besides having held the superintendency of the public schools for a number of years.

FREDERICK L. BRAUN, M.D., Cleveland, Ohio, October 31, aged 51 years. When the Civil War broke out he enlisted in Company A, West Virginia Cavalry and served three years, receiving an honorable discharge. He then entered the medical department of the University of Pennsylvania. His record there warranted a post-graduate course at Heidelberg. Dr. Braun practiced at various times in Pittsburg, Toledo and Cincinnati.

GEORGE F. MATTER, M.D., Jefferson 1866, of the Two Hundred and Tenth Regiment Pennsylvania Volunteers and a hospital steward during the war, died at Shenandoah, Pa., of cerebro-spinal meningitis, October 22, aged 57 years.

CHARLES HUDSON AVERY, M.D., Long Island College Hospital 1865, for many years secretary of the New York County Medical Society, died at his home in the Borough of Manhattan, N.Y., November 3. He was born in 1834 in Perryville, N. Y., and had been for thirteen years an invalid. A widow and a daughter are his survivors.

FRANK L. SALLADE, M.D., Jefferson 1866, at Womelsdorf, Pa., October 24.——Arthur L. Hummel, M.D., University of Maryland 1884, of Hummelstown, Pa., medical journalist, at Denver, Colo., October 26, aged 40 years.——A. H. Ayres, M.D., Urbana, Ohio, October 31, aged 65 years. The Doctor was formerly superintendent of the Columbus Insane Asylum, and during the Civil War he served as surgeon of the Thirty-fourth Ohio Volunteer Infantry.——Isaac D. Conrad, M.D., Newton, Kan., October 26.——W. D. Cooper, M.D., Morrisville, Va., October 29, aged 77 years.——George W. Langford, M.D., Williamston, Mich., October 28, aged 57 years, a graduate of the medical department of the State University.——Elijah R. Mendenhall, M.D., Indianapolis, Ind., November 3, aged 82 years.——Louis Meyer, M.D., Cleveland, Ohio, October 29.

SOCIETY NEWS.

The Indian Territory Medical Association will hold its semi-annual meeting at Muskogee, I. T., Dec. 7 and 8, 1897.

The American Electro-Therapeutic Association will hold its next annual meeting in Buffalo, N. Y., Sept. 13, 14 and 15, 1898.

Tri-State Medical Association.—Owing to the quarantine now being enforced against Memphis, which will hold at least ten days after the first killing frost, the meeting of the Tri-State

Medical Association has been postponed until December 15 and 16.

The Association of Military Surgeons of the State of Illinois held its annual meeting at the Great Northern Hotel, Chicago, November 4. The following officers were elected: President, Col. Nicholas Senn; vice-president, Major Truman W. Miller; secretary and treasurer, Major Charles Adams. A banquet in the evening ended the session. Colonel Senn acted as toastmaster.

The Medical Association of Central New York opened its thirtieth annual convention at Buffalo, N. Y., October 19, with an attendance of about one hundred physicians. The discussion of greatest general interest was that on "The Value of Expert Testimony in Medico-Legal Cases." Tracy C. Becker, a lawyer, presented the argument from a legal point of view and read opinions from many judges of the supreme court of this State. All the judges admitted the necessity of expert testimony, but agreed that the present system of obtaining it made it worse than valueless. The report of the Committee on Remedial Legislation in regard to expert testimony was in favor of a change of the statutes to require all medical testimony to be brought in by a commission to examine the subject and the matters to be brought to the jury in the trial, the medical experts being appointed by the court as referees, and are to be paid by the county, without being allowed to receive fees from either the defence or the prosecution.

MISCELLANY.

The Western Medical and Surgical Gazette, Vol. i, No. 1, November, 1897, has come to our exchange table. The editors of this new journal are Wm. N. Beggs, A.B., M.D., and Lincoln Mussey, M.D., and the office of publication, Denver, Col. The *Gazette* will appear monthly. Subscription price, $2 per year.

Hemotherapeutics in Chlorosis.—De Dominicis considers a form of diabetes affecting principally the red corpuscles. He treats it with the usual tonic regimen or with the direct transfusion of blood from a dog, with which he has secured remarkably favorable results. No benefit was derived from venesection.—*Therap. Woch.*, October 1.

Disinfection of the Conjunctiva.—Albin Dalen reports in the August *Nordiskt Med. Arkiv*, the results of much experimental research in this line. He asserts in conclusion that the disinfecting power of the physiologic salt solution is fully equal to that of sublimate in disinfecting the conjunctiva; also that bacteria continue to proliferate beneath a bandage moistened with 1 to 5,000 sublimate, and that it has no possible advantage over a dry sterile bandage; also that the introduction of iodoform has no perceptible effect upon the development of the microbes.

Extirpation of a Fistula in the Neck through the Mouth.—Professor Hacker describes in the *Cbl. f. Chir.*, of October 16, his extirpation of a complete congenital fistula in the right side of the neck of a boy of 8 years, leaving only a slight lineal scar. The fistula allowed the passage of milk, which appeared in the throat between the right tonsil and the arch. He found the canal easily movable its entire length, and by inserting a fine silver wire through the fistula with a hook in the end and a thread he succeeded in pulling the entire canal loose and drawing it out in two parts through the mouth like the evulsion of a finger of a glove.

Highly Decorated.—According to a secular exchange, Sir William MacCormac, president of the Royal College of Surgeons in London, is well recognized. He has the Order of Medjidie, the Crown of Prussia, the Ritter Kreuz of Bavaria, the Dannebrog, the Crown of Italy, the Cross of the Takavo of Servia, the Order of Merit of Spain and Portugal, and the Star of Sweden. He is also Knight of Grace of the Order of St. John of Jerusalem. Sir William was born in 1836, has taken part with the volunteer medical corps in the Franco-Prussian, Turko-Servian and Russo-Turkish wars. He is an enthusiastic fisherman and golf-player.

For the Benefit of Dr. Laporte.—A subscription has been started for the benefit of Dr. Laporte by the medical journals of Paris, which have been most emphatic in their denunciation of the arrest and criminal proceedings instituted against this young physician. He is one of the medical men on the night service furnished free to the poor, and was summoned hastily to a confinement case which he found complicated with a deformed pelvis, but as it appears, the patient had already borne five children. Natural delivery being difficult and the child already dead, he performed craniotomy with a cold chisel, wood mallet and a mattress needle, not leaving until delivery had been accomplished. Peritonitis developed later and death ensued. At the necropsy the bladder was found to have been perforated in two places. He was arrested and condemned to three months imprisonment.

A Death by Football Play.—The death of a New York football player, from a broken back-bone received while the game was in progress, will revive the discussion of the dangers of this game. It is true, the accident was the result of violence, but it is so unusual that it is hardly fair to draw any sweeping conclusions from it. It has been asserted that the young man had some kind of structural weakness of the vertebræ and did not know it. The doctors say that the fracture was caused by a sudden thrust of the head forward, the bone snapping in consequence, but they admit that the same result would probably not follow once in a thousand times. An abnormal brittleness of the bones is a possible condition, and the moral of the case is that young men who play football should be thoroughly acquainted with their physical condition.

Progress at Craig Colony During the Past Year.—The Craig colony for epileptics at Sonyea, Livingston County, N. Y., closed its fourth fiscal year Sept. 30, 1897. There were at that time 214 inmates in the colony, the majority of whom had been transferred from the various county houses throughout the State. New buildings are in course of construction which, when completed, will enable the colony to accommodate 140 additional patients, making the total population about 350. It is estimated by State charity officials that this number represents about one-third of the total number of epileptics now on public charge throughout the State. The medical superintendent, Dr. William P. Spratling, reports a great increase in the value of agricultural and industrial products of the colony over last year, so that the ratio of earnings of the patients to the cost of their maintenance is even larger than that of last year, which was a little over 50 per cent. A laboratory for the use of a pathologist and pathologic chemist is being constructed. Dr. Christian A. Herter of New York has been appointed pathologic chemist and Dr. Ira Van Gieson of New York consulting pathologist to the colony. Dr. Frederick Peterson of New York was re-elected president of the board of managers. The managers, at their annual meeting, decided to ask the coming legislature for $200,000 for dormitory buildings in order that they may increase the residence capacity of the colony for patients.

Unreliability of our Present Bacteriologic Tests in Diphtheria, is emphasized by Prof. Spronck in a contribution to the *Semaine Méd.*, of September 29. He states that macroscopic and microscopic examination of colonies developed in serum is not absolute, and that nothing but the inoculation of an animal will decide the question positively, except in the severest cases or during epidemics. When a subcutaneous injection of 2 c.c. of fresh culture in bouillon does not kill a guinea pig weigh-

ing 300 grams, but only causes a more or less marked edema, the bacillus has nothing in common with the diphtheria bacillus except a superficial resemblance in the vast majority of cases. Absolute certainty can only be attained by a previous preventive inoculation of 0.5 to 1 c.c. of active antidiphtheria serum at 1 to 10,000 injected under the skin of the inside of the thigh of a guinea pig weighing about 300 grams. Six hours later this animal and another of the same size, are both inoculated with 2 c.c. of the culture, in the abdomen. If the bacillus is the true diphtheria bacillus, the immunized animal will show no traces of edema, but if not, both animals have edema. The test does not require more than twenty-four hours if the materials are at hand. By thus scientifically eliminating all pseudo-diphtherial cases, we will only have to resort to serum treatment where it is actually required. He adds that the preliminary immunization will not be necessary if the result of his recent research is confirmed, that the attenuated diphtheria bacillus can not live in the human organism.

The Antivivisection Bill.—The following letter was recently sent to every county medical society in Indiana, in response to request made in the article on "Antivivisection" in the JOURNAL of Aug. 14, 1897: "At a regular meeting of the St. Joseph County Medical Society, a committee was appointed to draft resolutions, disapproving U. S. Senate Bill 1063, instigated by the antivivisectionists, now on the Congressional Calendar, for the next session. The committee was instructed to correspond with the local Congressmen and the United States Senators of Indiana, urging them to refuse their support of the above bill. The committe was furthermore instructed to send a copy of the resolutions to the Congressmen and the United States Senators and also to advise every county society in the State of the action of the St. Joseph County Medical Society urging them to take a similar stand on this important question. The committee would be pleased to learn the attitude of your Society concerning this bill, also to know what action taken.

Yours fraternally, H. F. MITCHELL, Secretary.
South Bend, Ind.

J. B. Berteling, H. T. Montgomery, F. P. Eastman, Com."

Anatomic Changes in Eclampsia.—A study of 500 cases by Prutz, a large proportion personal, shows that hemorrhage is the distinguishing feature of the changes found in the various organs and that among the complications bronchopneumonia and cerebral hemorrhage are the principal causes of death. Bacteriologic investigation results negatively except in mixed infection. Chemic investigation of the blood and of the toxicity of the urine and serum is still in the preliminary stages, and our present knowledge of eclampsia does not justify sweeping conclusions in regard to its etiology. In 368 cases only seven had sound kidneys (these not certain); there was nephritis in 46 per cent.; chronic inflammatory processes in 11.6 per cent. Changes in the liver mostly hemorrhagic, were noted in 213 cases. Cerebral hemorrhage into the brain was noted in 28.4 per cent.; intracranial, 35.3 per cent. The stomach, intestines, spleen, pancreas, suprarenals and genitalia are also frequently found to have been the seat of hemorrhage, and even the skin, mucous membrane, muscles, serous surfaces and the thyroid gland.—*Deutsche Med. Woch.*, September 30.

Celloidin Threads for Sutures.—A fine, solid thread that is flexible, ties easily, does not knot, and is inexpensive, is made by boiling pieces of hemp or linen thread in a soda solution, rinsing in cold water, and boiling them twice again at an interval of six to eight hours, five minutes at a time, in ordinary water, dipping them afterward in alcohol and drying. The threads are then rolled on glass spools and immersed for twenty-four hours in a mixture of equal parts alcohol and ether, with 25 to 30 per cent. celloidin and 1 per cent. sterile castor oil. The thread is then wound on a wooden frame and the excess of celloidin removed, after which it is wound on the spools, and sterilized just before the operation by boiling it twice in a 1 per cent. solution of sublimate. It is made to resemble silkworm gut by impregnating it again with celloidin until it is the required size, treating it the last time with a 5 per cent. solution of celloidin. De Goubaroff adds that it does not act like a drain, which is one of the disadvantages of silk.—*Sem. Méd.*, October 6.

Gleanings.—St. Vitus dance cured with massage, combined with baths at 27 degrees R. and iron-arsenic medication 10 cases—(*Wratsch*, August 14).——Clamp forceps recommended instead of a ligature for the funis neonatorum, applying them perpendicularly, close to the umbilicus, and leaving them in place for twenty-four hours, wrapped in cotton. Bar claims superior results by this simple and certain method.—(*Presse Méd.*, September 8).——Nineteen cases of Madura foot successfully treated by stretching the nerve. Nine observations of zona as premonitory symptoms of tuberculosis.—(*Ann. de Derm.*, September.)——Tendency of wounds in the stomach to heal spontaneously. Expectant treatment advised unless alarming symptoms occur.—(*Gaz. d. Osp. e d. Clin.*, September 28.)——Band iron recommended for bandages instead of plaster casts, in military compaigns.—(*Münch. med. Woch.*, No. 33.)——Euchinin recommended, especially for children; "harmless, tasteless and as effective as quinin."—(*Guz. d. Osp. e d. Clin.*, October 3.)——Remove the odor of iodoform from the hands by rinsing them in orange-flower water.—(*Sem. Méd.*, September 29.)——The remarkable attenuation of syphilis in the hot dry belt of Mexico noted by Carbajal.—(*Revista Médica*, September 15.)——Another medical saint added to the calendar by the Pope: Anthony Zacaria, Pavia, 1520. The other physicians already on the calendar are St. Luke, Cosmo and Damien.——A course of training for disinfectors inaugurated at Breslau by the Prussian government in charge of Professor Flügge.

Surgery of the Kidneys.—Israel leads in the number of operations performed on the kidneys to date, 191, with a mortality of 20 per cent. in 79 nephrectomies, although his mortality in 24 cases of malignant neoplasms was only 12.5 per cent. Seven relapsed of the 21 cured at first, but the rest, 60 per cent., have shown no signs of relapse in three years. He ascribes this progress to improved diagnosis by palpation and cystoscopy and the extirpation of the adipose capsule and glands. He disproves of exploratory incisions unless strictly indicated. Küster states that palpation is insufficient when the tumor is in the center or at the upper pole, and may lead to metastasis. He distinguishes three groups of malignant neoplasms: *Carcinoma*, a late palpable tumor on the borders of the organ, early breaking through the capsule, hard to move; *sarcoma*, occurring principally in childhood, forming large tumors early, breaking through the capsule late, with only inflammatory adhesions; *struma suprarenalis*, usually leaving one pole intact, but may remain stationary for years and then develop suddenly, very malignant. In obscure cases open up the kidneys freely on both sides. Easily movable tumors can be removed through a lumbar incision; those harder to move should be reached by a laparotomy, and those absolutely fixed should not be operated on. Tuffier reports 156 surgical interventions on the kidneys. He agrees with Israel that wandering kidney is only a symptom of complex enteroptosis and performs very few nephropexies for this cause. He advocates extreme conservatism in traumatic lesions and performs nephrectomy early in primary tuberculosis (fifteen cases) to avoid a later operation. He has treated intermittent hydronephrosis most successfully with nephropexy. Küster states that the mortality in the 263 operations on record for malignant neoplasms of the kidneys is 41 per cent., but of the 155 patients that survived only 9 are permanently cured, that is, without recurrence for more than three years.—Moscow Congress.

Recovery Allowed for Injuries Sustained before Birth.—A novel question was decided by Judge Chetlain of the superior court of Cook County, Illinois, Sept. 24, 1897, in the case of Allaire v. St. Luke's Hospital. The question was whether a child after it is born has a right of action for injuries sustained by it *en ventre sa mère*; or, in other words, whether a child unborn is a person in being, so as to be entitled after its birth to maintain such an action. It was averred that the defendant was in the business of conducting a hospital and of accepting for accouchement for hire, women about to be confined; that the mother of the plaintiff, three or four days before his birth in the regular course of nature, applied to the defendant and contracted with it, upon a compensation then and there agreed on for it, for the latter to shelter, attend, treat during confinement and care for her and her child, then *en ventre sa mère*, during the period of childbirth and convalescence thereafter; that in pursuance of that agreement the mother paid such compensation, and was accepted at the hospital; that the servants of the hospital then and there placed her in an elevator for the purpose of taking her and the unborn plaintiff to an upper floor of the hospital for shelter, care and treatment, and that such servants so negligently and unskilfully conducted and operated the elevator that the plaintiff was permanently injured. The question of law applicable to the facts of this case does not appear to have ever been decided, either in this country or in England. From a careful study of such authorities as he could find bearing at all upon it, the judge came to the conclusion that, as a general principle, the child *en ventre sa mère* is considered as born or *in esse* when it is for its benefit, and especially so when the application of the doctrine will work no hardship. He further thinks that the rule should be applied in personal actions: 1. Where a person inflicts an injury upon a woman with child, knowing her to be such, and for the purpose of inflicting an injury upon her unborn child, whereby such child suffers permanent injuries. 2. Where a mother or other person contracts, upon a valuable consideration for, in reference to, or on behalf of the unborn child, for care and attention or other service for the benefit or safety of the child, or of both the mother and child, where the duty arises out of contract and from the relative situation and circumstances of the parties at the time of the occurrence of the acts of negligence. So, here, the judge holds that there was a good cause of action stated.

Hospitals.

PENNSYLVANIA.—The D. Hayes Agnew Memorial Pavilion of the Pennsylvania Hospital, Philadelphia, held its opening ceremonies October 15. It was erected at a cost of $150,000, is 154 feet in length and 184 feet in depth, and is furnished with the latest surgical instruments. A feature of the third floor is a private room with a wainscoting of mirrors for optical cases. The new building has 120 beds.

BY THE WILL of the late George M. Pullman the following bequests were left to hospitals: St. Luke's Hospital, $20,000; Hospital for Women and Children, and Presbyterian Hospital, each $10,000.——The new hospital at Niagara Falls, N. Y., was opened October 30, with appropriate ceremonies.

Societies.

The following meetings are noted:

Illinois.—Peoria City Medical Society, October 28.——The Springfield Medical Club, October 27.

Indiana.—Annual meeting of the Big Four Railway Surgeons, Indianapolis, November 11.——Cass County Medical Society, Logansport, October 29.——St. Joseph County Medical Society, South Bend, October 27.——Tippecanoe County Medical Society, Lafayette, November 10.

Kentucky.—Southern Kentucky Medical Association, Bowling Green, November 3 and 4.

Massachusetts.—Union Medical Society, Springfield, October 29.

Minnesota.—Hennepin County Medical Society, Minneapolis, November 1.

Missouri.—St. Louis Medical Society of Missouri, St. Louis, November 6.——Southern Surgical and Gynecological Society, St. Louis, November 9, 10 and 11.

New York.—Academy of Medicine, Syracuse, October 26.——Suffolk County Medical Society, Patchoque, October 28.

Detroit.

THE HEALTH REPORT for the week ending November 6 is as follows: Deaths 85, of which 30 were children under 5 years of age; births 42, of which 35 were females; 30 cases of diphtheria, 46 cases of scarlet fever; deaths from diphtheria 4; scarlet fever none.

AT THE REGULAR MEETING of the Wayne County Medical Society October 28, Dr. S. E. Sanderson read a paper on "Asepsis in Barbering." The writer said: "What barbering is today, practically, barbering always has been. True, the styles of hair and beard may change, but the barber's methods never. And what a source of contagion these methods must be! What eager crowds of malevolent pathogenic bacteria must lurk within the folds of his towels, between the teeth of his combs and on the blades of his scissors and razors! What an opportunity for the streptococcus of erysipelas to enter the *locus minoris resistentiæ*, as the incision from a barber's razor! The micro-organisms of furuncle would rejoice at such an opportunity, while the bacillus of anthrax would consider itself highly favored with such a field for propagation. Would any of us run the gauntlet of menace from such diseases as tinea, scabies or phtheiriasis by putting ourselves unreservedly into the hands of a barber in one of our third-rate shops? Yet every time we commit ourselves to the tender mercies of even our best tonsorial artists, we face the possibilities of becoming inoculated with syphilis or lupus, and we can not say when we are free from infection of favus, trichophytosis, impetigo contagiosa, and even carbuncle, glanders, leprosy, diphtheria, smallpox, and in fact any contagious disease. True, these last named diseases are rarely if ever so contracted, but even so, what one of us can say he shall therefore be fortunate enough to escape. Barbering as it is practiced today is a menace to the public health. A process like barbering, which is so often attended with an opening of the cuticle with an edged tool, should be done under conditions which make it certain that such tool and the surroundings of such a wound will not prove a source of infection. In other words, we should have aseptic barbering. The sanitary authorities of Paris have taken action in this matter and have instituted regulations to require barbers to use aseptic tools and sterilized towels, and to keep their hands clean by washing for each customer. A later report from France says that these regulations are rigidly enforced, as the new law has already brought down the penalty upon at least one offender. What shall we do in this matter? There is only one right course. France has taken the initiative step; America should not be slow to follow. Every barber should be required to use only such combs, scissors, razors and brushes as can be thoroughly sterilized by boiling or by the application of some antiseptic solution. Each towel or napkin should be used but on one customer, after which it should be thrown into the wash. The barber's hands should be kept scrupulously clean by being carefully washed before each sitting, and then dipped into an antiseptic solution. In addition to this, all dusting powders and other means of holding and spreading contagion should be abolished, and the face of the customer treated with some such mild solution as listerin. The lather, brush and soap should be rendered sterile also."

Louisville.

THE ANNUAL REPORT of the Board of Safety has just been submitted and contains some interesting matter. It calls attention to the fact that the death rate in Louisville during the past year was only 14.4 per thousand, the smallest within thirty years. In bringing about this state of affairs, three sanitary police were appointed during the year and assigned to duty at

the health office, in addition to which the entire police force has acted in conjunction with it. The report states "there is but one thing wanted in this department to render its work more efficient, and that is the employment of an experienced chemist and bacteriologist, for whose peculiar work there is a large field, and such work would surely result in a still further reduction in our death rate." The salaries paid in the department of health are as follows: Health officer, $2,000; secretary of board of health, $420; physician in eastern and western district, $1,800; live stock inspector, $1,200; assistant live stock inspector, $900; incidental and emergency fund, $1,000; total, $7,320, which will show perhaps one of the smallest amounts allowed any health department of a city of the size of Louisville in the United States. Attention is called to the work of the City Hospital, with upward of fifty physicians and surgeons attending and twenty-two female and two male nurses. The hospital has now a modern ambulance service, which is run at a cost of $1,510 per annum. The total cost of the hospital is $40,510.65. The actual cost to the city for officers, repairs, employes and patients has been less than 0.48\frac{2}{3}$; cost per diem for rations, 0.14\frac{1}{9}$; daily average of patients 156, the largest in the history of the institution. In regard to the Home for the Aged and Infirm, the report says: "After four years of unremitting effort, we have succeeded in erecting a hospital for the sick and an asylum for pauper idiots for the use of this institution." This is a good work and the Home is in splendid condition. It is recommended that an elevator be erected as soon as possible, as at present the inmates are compelled to walk up and down three flights of steps several times a day. The institution is run at a cost of $21,800. A farm run in connection with the institution has had a splendid yield. There are 317 inmates, 279 white, 36 colored; there were 25 deaths during the year; the average cost for each person, per diem, 12$\frac{1}{3}$ cents. The nurses of the training school of the City Hospital receive $5 per month during their stay in the hospital and $75 at the time of their graduation. The city physician's report is as follows: Number of visits paid by the physician in the eastern district, 496; number of prescriptions, 1,726; number of visits paid by physician in the western district, 387; number of prescriptions filled, 432. It is recommended that the location and office hours of these physicians be placed in the daily papers as an advertisement at regular intervals so they will be the more accessible to those needing attention. The city dispensary is located at the City Hospital, all prescriptions for the poor being certified by the city physicians or the health officer and are promptly compounded, free of charge. There were 1,891 prescriptions filled during the year. The cost of maintainance of the Eruptive Hospital for the year was $2,908.52. This is strictly a smallpox hospital. At the morgue there were 71 dead bodies received; number claimed by friends, 8; number of bodies given to the medical colleges, as provided by law, 63. This institution is conducted by the Medical Department of the University of Louisville, free of charge to the Board.

BANQUET.—The physicians who contributed to the fund for the entertainment of the members of the Mississippi Valley Medical Association in this city October last, met at the Louisville Hotel around the banquet table, to celebrate this most successful meeting. It was a fitting wind-up of a most enjoyable occasion, and the expression of opinion was that the twenty-third annual meeting of the Mississippi Valley Medical Association would be remembered with the greatest pleasure.

KENTUCKY SCHOOL OF MEDICINE.—An important change has taken place in this institution, in its amalgamation with the Kentucky University, becoming its medical department. Formed as it was by a consolidation, completed at Lexington in 1865, of Transylvania University, chartered as a seminary in 1783 and organized as a university in 1799, and Bacon College organized in 1836, this institution has had an honored career of more than a century. The University comprises four colleges, each under the government of its own faculty, and an academy or preparatory department, in charge of a principal and assistant.

CHANGE OF ADDRESS.

Blech, G., from 119 Miami Ave. to 15 W. Columbia St., Detroit, Mich.;
Boytam, J. E., from 97 E. 3d St. to 319 Broadway, Cincinnati, Ohio;
Brown, D., from 40 E. 57th St. to 254 W. 54th St., New York, N. Y.
Clark, J. F., from Fairfield, Iowa, to 411 Michigan St., Toledo, Ohio.
Dunn, B. S., from Los Angeles, Cal., to 419 Boylston St., Boston, Mass.
Gresens, C. W., from 821 Lincoln Ave. to 688 Fullerton Ave., Chicago.
Harris, S. M., from San Juan to Grass Valley, Cal.
King, Thomas, from Cincinnati to 106 W. Water St., Piqua, Ohio; Kuszynski, J., from 19th and Hoyne to 151 W. Blackhawk, Chicago, Ill.; Kunz, E., from 314 Sedgewick St. to 81 Lincoln Ave., Chicago, Ill.; Klapp, W. P., from 622 Spruce St. to 1716 Spruce St., Philadelphia, Pa.
Murrell, T. E., from Denver, Colo. to Tucson, Ariz.
Ricketts, B. M., from 137 to 415 Broadway, Cincinnati, Ohio; Riley, E. A., from Huron, Kansas to Starfield, Mo.; Ravogli, A., from cor. 7th and Vine to 5 Garfield Pl., Cincinnati, Ohio.
Seiler, Carl, from Philadelphia to 203 Jefferson Ave., Scanton, Pa.; Strueh, Carl, from 648 W. 12th St. to 540 Ashland Ave., Chicago, Ill.
Taylor, J. J., from 3709 Brown St to 12th and Walnut Sts., Philadelphia
Williams, R. F., from Warm Springs to Franklin and 3d Sts., Richmond, Va.; Wolfe, J. G., from 322 Center Ave. to 403 Jackson Boul., Chicago, Ill.

LETTERS RECEIVED.

Atkinson, W. B., Philadelphia, Pa.; Antikamnia Chemical Co., St. Louis, Mo.; Ahlstrom, A. E., Minneapolis, Minn.; American Dental Weekly, The, Atlanta, Ga.
Bromberg, F. G., Mobile, Ala.; Bluhm, Geo. J., Chicago, Ill.; Bullock, E. S., New York, N. Y.; Brodie, B. M., Washington, D. C.; Bell, Clark, New York, N. Y.; Byers, J. Wellington, Charlotte, N. C.; Boehringer, C. F., and Soehne, New York, N. Y.; Benziger Brothers, New York, N. Y.
Cokenower, J. H., Des Moines, Iowa; Clum, F. D., Cheviot, N. Y.
Davis, Gwilym G., Philadelphia, Pa.
Esterly, D. E. (2), Topeka, Kansas.
Free Press Printing Co., Mankato, Minn.
Gahm, J. P., Ellisville, Ill.
Hanley, J. J., Boston, Mass.; Hutchins, M. B., Atlanta, Ga.; Hektoen, L., Chicago, Ill.
Jamar, John H., Elkton, Md.; Jenkins, J. F., Tecumseh, Mich.
Knopf, S. A., New York, N. Y.; Kennicbrew, A. H., Tuskegee, Ala.; Kuy-Scheerer Co., The, New York, N. Y.
Lewis, LeRoy, Auburn, N. Y.; Lehn & Fink, New York, N. Y.; Lewis, H. K., London, England; Longmans, Green & Co., New York, N. Y.
Menefee, E. L., Granbury, Texas; Mulford, H. K. Co., Philadelphia, Pa.; McBride, M. A., Yorktown, Texas; Milliken, Jno. T. & Co., St. Louis, Mo.; Moore, Dwight S., Jamestown, N. D.; Merrill, W. S. Chemical Co., The, Cincinnati, Ohio; Meisenbach, A. H., St. Louis, Mo.; Mattison, J. B., (2) Brookyn, N. Y.; Moore, Dwight S., Jamestown, N. D.; Mason, J. S., Pennfield, Ill.
New York Polyclinic, New York, N. Y.; Neuneker, Henry, Elberfeld, Ind.
Oxford Retreat, Oxford, Ohio; Oakland Chemical Co., New York, N. Y.
Patterson Home, Grand Rapids, Mich.
Rooney, Abby Fox, Cambridge, Mass.; Rood, C. A., Reedsbury, Wis.
Shoup, Jesse, Washington, D. C.; St. Louis Medical College, St, Louis, Mo.
Whittaker, James T., Cincinnati, Ohio; Wandless, Henry W., Dallas, Texas; Wingate, U. O. B., Milwaukee, Wis.

PAMPHLETS RECEIVED.

Headaches from Nasal Causes. By S. F. Snow. Paper. 12 pages. Reprinted from the Medical News.
Medical Department of the University of Vermont, 45th Annual Announcement. Paper. 32 pages. Burlington, Vt.
Report of two Cases of Syphilis with remarks relative to Ptyalism. By C. F. Drennen. Paper. 6 pages. Reprinted from the Medical News.
Some Observations on the Surgery of the Gall Tracts with Report of Cases. Is the Gall Bladder a Rudimentary and Useless Organ? By J. E. Allaben. Paper. 20 pages. Reprinted from the North American Practitioner.
Sprains; Report of 123 Recent Cases Treated by Massage. By A. E. Gallant. Paper. 20 pages. Reprinted from the Medical News.

Trade Pamphlets.

Correct Diagnosis; the Postal Circulation, St. Louis. Peacock Chemical Co.
Diphtheria Antitoxin Serum. Present status of. Philadelphia. H. K. Mulford Co.
Disinfectant and Deodorizing Lamp. New York. Schering and Glatz.
The Twentieth Century Movement. Chicago Am. Electric Vehicle Co.
Tri-Elixiria. Memphis. Tri Elixiria Remedy Co.

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the two weeks ending November 6, 1897.

P. A. Surgeon Adrian R. Alfred, detached from waiting orders at his home, Jeddo, Mich., and ordered to marine recruiting rendezvous, San Francisco, Cal.
Surgeon P. Fitzsimons, ordered to duty as a member of the board of inspection and survey, Washington, D. C., November 8.
Asst. Surgeon G. D. Costigan, detached from the "Lancaster" and ordered to the "Indiana."
Medical Director W. K. Van Reypen, detached as member of board of inspection and survey, and made chief of bureau of medicine and surgery.
Asst. Surgeon T. W. Richards, detached from the "Maine," ordered home to Washington and granted two months' leave.